DEEPWATER BRACHYURA (CRUSTACEA : DECAPODA) FROM SOUTHERN QUEENSLAND, AUSTRALIA WITH DESCRIPTIONS OF FOUR NEW SPECIES

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Twenty-eight species of deepwater crabs are recorded from mid-and southeastern Queensland taking the number now known to 33. Nine species have not previously been recorded from Australia, *viz Dicranodromia baffini* Alcock and Anderson, *Latreillopsis bispinosa* Henderson, *Paromola japonica* Parisi, *Paromolopsis bousi* Wood-Mason, *Notopoides latus* Henderson, *Cyrtomaia horrida* Rathbun, *Pleistacantha oryx* Ortmann, *Benthochascon hemingi* Alcock and Anderson, *Intesius pilosus* Guinot and Richer de Forges. Four new species are described. *Ranilia tenuiocellus* sp. nov. resembles *R. horikoshi* Takeda in having degenerated eyes but differs in the lack of orbital teeth. *Ranilia trirufomaculata* sp. nov. is described from Western Australia and Queensland. It is distinguished from *R. misakiensis* Sakai by the three dorsal red spots, the sharp distal spine on the superior border of the palm, the lack of a raised ridge on the wrist, and carapace proportions. A key to Indo-west Pacific *Ranilia* H. Milne Edwards species is given. *Mursia microspina* sp. nov. differs from its closest congener *M. hawaiiensis* Rathbun by having shorter postero-lateral borders, a smaller length to breadth ratio, and by the shape of the tubercles on the lower inferior border of the chela. *Rochinia griffini* sp. nov. is unique in the disposition and length of the carapace spines. *Carcinonectes pacificus* Stephenson is synonomised with *Benthochascon hemingi* Alcock and Anderson

□*Crustacea, Brachyura, Australia, new records, new species, Homolodromiidae, Dromiidae, Homolidae, Raninidae, Calappidae, Leucosiidae, Majidae, Portunidae, Geryonidae, Goneplacidae.*

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Collections of deepwater crustacea from Queensland have been few. Campbell (1971) reported on collections made by the trawler *Nimbus* off southern Queensland, and this appears to be the first account of any deepwater species. The *Nimbus* survey however, was not specifically deepwater and although some shots were made as deep as 204 fm (373 m), most were in quite shallow water. Only five stations were from depths of 100 fm (183 m) or more, and from these only seven species were recorded. The F.I.S. *Endeavour* undertook exploratory offshore dredging and trawling but deepwater work seems to have been confined to southern Australia (see Rathbun, 1923). The work of most direct relevance was that done on collections made by the crew of the *Kapala* and reported on by Griffin and Brown (1976). They found fourteen species of crab from deep water off the coast of New South Wales.

Between 1980 and 1984 the Queensland Fisheries Service undertook a number of exploratory cruises to investigate the potential of fish and crustacean fisheries in the deeper waters of the lower continental shelf and slope. All trawls were using Siebenhausen prawn nets, so in general the smaller faunal components were not brought to the surface.

The first expedition was the *Craigmin* survey. This was conducted between 21°30'S and 26°31'S in September–October 1980. This was a combined Queensland and Commonwealth Government survey but unfortunately much of the material was poorly preserved. The next survey was aboard the *Iron Summer* between July 1982 and June 1983 (see Potter, 1984). This covered the area between 26°20'S and 28°10'S (i.e. between Noosa and Point Danger, SEQ) The *Southern Intruder* operated out of Bundaberg between August 1983 and April 1984 (see Dredge and Gardiner, 1984) sampling the Saumarez Plateau (22°–24°30'S) in depths between 150 m and 750 m. This was in many ways a resample of the earlier *Craigmin* survey.

This paper reports on these recent collections and summarises the deepwater brachyuran crab fauna currently known from southern Queensland. As there is a further paper projected on collections from deep water off northern Queensland, discussion on biogeographic aspects will be reserved for that paper. The material has been collected largely by the Queensland Fisheries Service (Q.F.S.). The bulk of the material is housed at the Queensland Museum (QM) although some material in the collections of the Australian

Museum, Sydney (AM) has also been examined. Synonomies are not necessarily complete. Measurements are given as carapace length (cl.) or width (cw.), but unless otherwise stated, measurements are of carapace width. All drawings were made with the aid of a *camera lucida*.

SPECIES LIST OF DEEPWATER BRACHYURA TRAWLED OFF SOUTHEAST AND MID-EASTERN QUEENSLAND

* Denotes species reported by Campbell (1971) from SEQ and not found during the present study.

Section PODOTREMATA
- Family HOMOLODROMIIDAE
  - *Dicranodromia baffini* (Alcock and Anderson, 1899)
- Family DROMIIDAE
  - *Petalomera wilsoni* (Fulton and Grant, 1902)
  - * *Cryptodromia areolata* Ihle, 1913
- Family HOMOLIDAE
  - *Homola orientalis* Henderson, 1888
  - *Homolochunia kullar* Griffin and Brown, 1976
  - *Latreillopsis bispinosa* Henderson, 1888
  - *Latreillopsis petterdi* Grant, 1905
  - *Paromola japonica* Parisi, 1915
  - *Paromolopsis boasi* Wood-Mason, 1891
- Family RANINIDAE
  - *Notopoides latus* Henderson, 1888
  - *Ranilia tenuiocellus* sp. nov.
  - *Ranilia trirufomaculata* sp. nov.

Section HETEROTREMATA
- Family CALAPPIDAE
  - *Mursia microspina* sp. nov.
- Family LEUCOSIIDAE
  - *Arcania undecemspinosa* de Haan, 1841
  - * *Ebalia brevimana* Campbell, 1971
  - * *Ebalia longimana* Ortmann, 1892
  - * *Merocryptus lambriformis* A. Milne Edwards, 1873
  - * *Crytocnemus hemispheroides* Campbell, 1971
- Family MAJIDAE
  - *Cyrtomaia horrida* Rathbun, 1916
  - *Cyrtomaia suhmii* Miers, 1886
  - *Leptomithrax waitei* (Whitelegge, 1900)
  - *Platymaia fimbriata* Rathbun, 1916
  - *Platymaia maoria* Dell, 1963
  - *Platymaia remifera* Rathbun, 1916
  - *Pleistacantha oxy* Ortmann, 1893
  - *Rochinia griffini* sp. nov.
- Family PORTUNIDAE
  - *Benthochascon hemingi* Alcock and Anderson, 1899
  - *Charybdis (Charybdis) miles* (de Haan, 1835)
  - *Charybdis (Gonioneptunus) bimaculata* (Miers, 1886)
  - *Ovalipes molleri* (Ward, 1933)
  - *Parathranites orientalis* Miers, 1886
- Family GERYONIDAE
  - *Geryon affinis* A. Milne Edwards and Bouvier, 1894
- Family GONEPLACIDAE
  - *Intesius pilosus* Guinot and Richer de Forges, 1981

Family HOMOLODROMIIDAE

Dicranodromia baffini (Alcock and Anderson, 1899)

Arachnodromia Baffini Alcock and Anderson, 1899, pp.7,8; Alcock, 1899a, p.19, pl.2, figs 1, 1a–c; 1899b, p.132; 1901, p.33, pl.1, figs 1, 1a–c.

Dicranodromia baffini: Ihle, 1913, pp.86,89; Gordon, 1950, pp.204–5, text-figs 1A, 1B.

MATERIAL EXAMINED

QM W10801, ♂ (16.3 mm), trawled M.V. 'Iron-Summer', 27°59.37'S, 154°00.12'E, 590 m, 31.iii.1983, R. Morton (Q.F.S.).

REMARKS

Only two species of *Dicranodromia* have been reported from the Indo-West Pacific — *D. baffini* (Alcock and Anderson, 1899) and *D. doderleini* (Ortmann, 1892). These species are apparently closely related and it seems that characters for their separation are still poorly defined. *D. doderleini* has been considered endemic to Japan, although Serène and Vadon (1981) have recorded it from the Philippines without commenting on the features which distinguish their specimens from *D. baffini*.

Our specimen agrees with Alcock and Anderson's (1899) description of *D. baffini* in most respects. On the hepatic regions are a few spinules which are distinctly shown in the figures of Alcock

(1899a, pl.1, fig.1; 1901, pl.1, fig. 1), but Sakai (1976) remarks that the hepatic regions of *D. baffini* are unarmed, and conversely that *D. doderleini* has a few spinules in this region. Sakai (1976) also claims that the posterior carapace border is straight in *D. baffini* but invaginated in *D. doderleini* — it is clearly invaginated on our specimen and in the figure of *D. baffini* provided by Alcock (1899a, pl.1, fig.1). This character is probably of dubious status.

The outer surface of the palm of the chelipeds is uniformly covered with tubercles as Sakai describes for *D. baffini* and the length to breadth ratio of the telson is very close to that figured by Alcock (1901, pl.1, fig. 1b). Sakai (1976) states that the telson of *D. doderleini* is distinctly more elongate.

Points of difference with the original description are: the flagellum of antenna is about equal to the length of carapace (excluding rostral spines), not longer than the carapace; and the first leg (only one is intact) is less than twice the length of the carapace (*c.* 1.7 ×).

We feel that there is still some confusion in published accounts of these two species. However our specimen is closer to *D. baffini* than to *D doderleini* and in our opinion the differences noted — considering the small amount of material which has apparently been reported on — are insufficient grounds for describing our specimen as new.

DISTRIBUTION

Andamans, Travancore Coast, Maldives, and southeast Queensland, Australia.

Family DROMIIDAE

Petalomera wilsoni (Fulton and Grant, 1902)

Cryptodromia wilsoni Fulton and Grant, 1902, p.61, pl.9.

Cryptodromia lateralis: Chilton, 1911, pl.29 (not of Gray).

Dromia pseudogibbosa Parisi, 1915, p.102, pl.2, figs 1,2; Balss, 1922, p.106; Yokoya, 1933, p.97.

Petalomera lateralis: Richardson, 1949, p.60, fig. 61 (not of Gray).

Petalomera wilsoni: Rathbun, 1923, p.154, pl.42, fig. 1; Hale, 1927, pp.111 (key), 113–4, fig. 111; Sakai, 1935, p.33, pl.1, fig. 3; 1936, p.34, pl.1, fig. 4, text-fig. 9; 1965, p.9, pl.4, fig. 2; 1976, p.24–5, pl.6, fig. 1; Dell, 1968, p.14, pl.2.

MATERIAL EXAMINED

QM W10744, ♀ ovig. (23.8 mm), trawled M.V. 'Iron Summer', 27°24'S, 153°51'E, ?260m, 25.ix.1982, G. Smith (Q.F.S.).

DISTRIBUTION

Japan, New Zealand and within Australia from southeast Queensland to South Australia and Tasmania.

Family HOMOLIDAE

Homola orientalis Henderson, 1888 (Fig. 1A)

Homola orientalis Henderson, 1888, p.19, pl.2, fig. 1, 1a; Rathbun, 1923, pp.143–4, pl.37; Sakai, 1936, pp.46–7, pl.9, fig. 1; 1976, p.39, pl.8, fig. 4; Campbell, 1971, p.30; Serène and Lohavanijaya, 1973, p.24 (key), figs 19–22, pl.3A,B; Yaldwyn and Dawson, 1976, pp. 92–94, fig. 1.

Homola andamanica Alcock, 1899a, p.7; 1901, p.61, pl.4, fig. 20.

Homola barbata orientalis: Doflein, 1904, pp.14–15 (in part).

Thelxiope orientalis: Sakai, 1965, p.15, pl.6, figs 3,4.

? *Homola orientalis*: Guinot and Richer de Forges, 1981a, pp.530–2, text-figs 1A, A1, B, B1, 2B, B1, C, C1, pl.1, figs 2, 2a, 3, 3a, 4, 4a.

MATERIAL EXAMINED

QM W10593, ♂ (13.7 mm), trawled M.V. 'Iron Summer', 27°24'S, 153°51'E, 260 m, 25.ix.1982, G. Smith (Q.F.S.); QM W10594, ♀ ovig. (18.7 mm), trawled M.V. 'Iron Summer', 27°44'S, 153°52'E, 220 m (Est.), 30.vii.1982, P. Dutton (Q.F.S.); QM W11234, ♂ (23.9 mm), ♀ ovig. (13.1 mm), trawled M.V. 'Southern Intruder', 23°33'S, 152°23'E, 240 m, 30.xi.1983, P. Davie.

REMARKS

Guinot and Richer de Forges (1981a) distinguished two forms of *Homola orientalis*, a 'Pacific' and an 'Indian Ocean' form. The principle differences they described were — the proportions of the cephalothorax, the form of the merus of ambulatory legs 2–4, and the relative number of spinules on the sub-hepatic area. However the specimens we examined showed a considerable amount of variation in the above characters, especially in the spinules of the sub-hepatic area which typically varied from 8–12 and on one specimen from 5–14 on opposite sides. Further, the subhepatic regions were usually obviously defined as in Guinot and Richer de Forges' (1981a) figure for the 'Indian Ocean' form (fig. 1 B1).

The carapace length to breadth ratio varied in

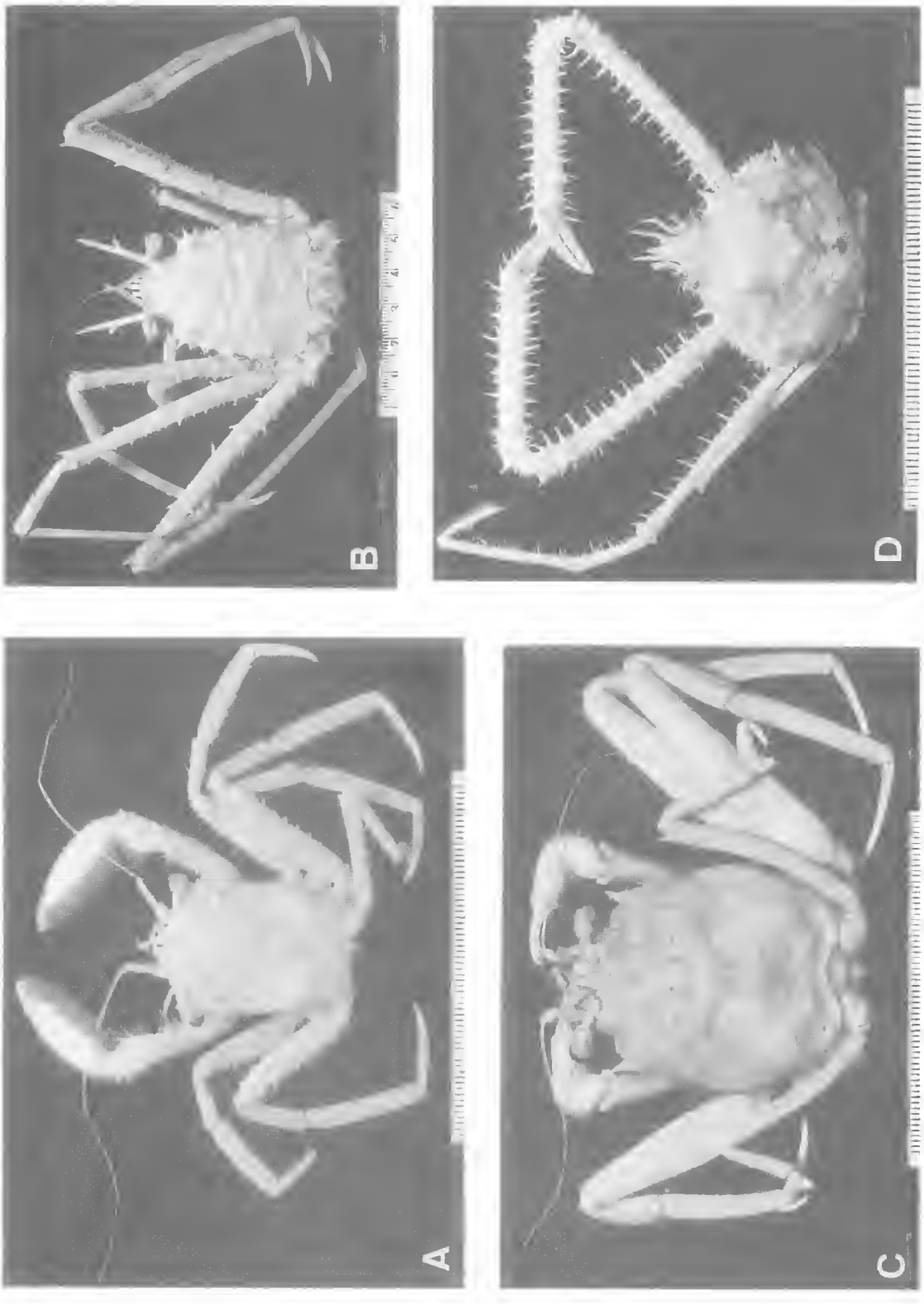


FIG. 1. A, *Homola orientalis* Henderson, 1888, ♂, QM W11234; B, *Latreillopsis petterdi* Grant, 1904, ♂, QM W10584; C, *Paromolopsis boasi* Wood-Mason, 1891, ♂, QM W11225; D, *Cyrtomaia horrida* Rathbun, 1916, ♂, QM W11228. Scale divisions 1 mm.

our specimens from 1.21 to 1.29 with an average of 1.25. Using the measurements given by Guinot and Richer de Forges (1981a) for their Pacific forms this range is extended to 1.14–1.29 with a mean of 1.22 (n = 19). The Indian Ocean form according to their measurements is generally of a smaller ratio, its range being 1.04–1.22 with a mean of 1.16 (n = 22). The ratios overlap markedly and therefore this character cannot be used with any certainty, although a tendency towards a more quadrate form is apparent in their Madagascar specimens.

DISTRIBUTION

Eastern Africa, Madagascar, Reunion Is., the Andamans, Indonesia, Japan, eastern Australia, New Zealand, New Caledonia and the Loyalty Isles.

Homolochunia kullar Griffin and Brown, 1976 (Fig. 3B)

Homolochunia kullar Griffin and Brown, 1976, pp.249–50, figs 1–3; Guinot and Richer de Forges, 1981a, fig. 4M.

MATERIAL EXAMINED

QM W10595, ♂ ovig. (29.6 mm), trawled M.V. 'Iron Summer', 27°53.90'S, 154°00.33'E, 560 m, 30.iii.1983, R. Morton (Q.F.S.); QM W14913, ♀ ovig. (27.6 mm), trawled M.V. 'Iron Summer', 27°13.00'S, 153°52.53'E, 590 m, 9.v.1983; R. Morton (Q.F.S.).

DISTRIBUTION

Off southeast Queensland and central New South Wales, Australia; New Caledonia.

Latreillopsis bispinosa Henderson, 1886 (Figs 2a–b, 3A)

Latreillopsis bispinosa Henderson, 1888, p. 22, fig. 3; Alcock, 1899b, p. 166; 1901, p. 73, pl. 7, fig. 26; Ihle, 1913, p. 77; Balss, 1922, p. 115, Yokoya, 1933, p. 103; Sakai, 1936, p. 53, pl. 2, fig. 2; 1965a, p. 16, pl. 7, fig. 2; Barnard, 1950, p. 343, fig. 65g; Gordon, 1950, p. 244, fig. 22a; Serène and Lohavanijaya, 1973, pp. 31–2, figs 47–50, pl. 4B.

MATERIAL EXAMINED

QM W10804, ♂ (12.5 mm), trawled M.V. 'Iron Summer', 27°35'S, 153°50'E, 210 m, 15.xii.82, G. Smith (Q.F.S.).

REMARKS

Our specimen is considered conspecific with *L. bispinosa* Henderson, 1886, although there are some similarities with the very closely allied species *L. gracilipes* Guinot and Richer de Forges, 1981.

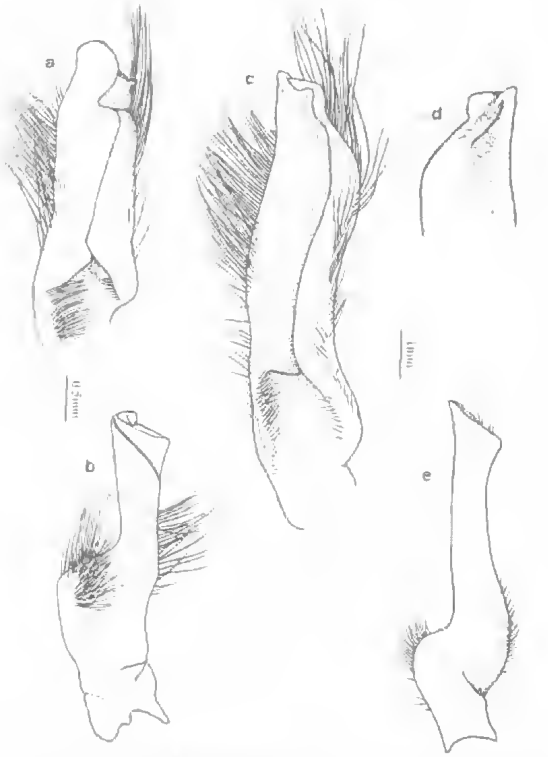


FIG. 2. *Latreillopsis bispinosa* Henderson, 1888, ♂, QM W10804; a — first male pleopod, abdominal view; b — second male pleopod, abdominal view; *Paromola japonica* Parisi, 1915, ♂, QM W10710; c — first male pleopod, abdominal view; d — sternal view of same (setae not shown); e — second male pleopod, abdominal view.

The characters which agree with *L. bispinosa* are:

1. There is an hepatic and sub-hepatic spine — the hepatic being longer and directed obliquely, and the sub-hepatic directed forwards. In *L. gracilipes* the two spines are of equal length and both are directed obliquely — there is also apparently a third, shorter spine below the line of the upper two and directed forwards.

2. Dorsal carapace surface lobulated but without spines (except for lateral branchials). *L. gracilipes* possesses a protogastric spine, a few spines on the cervical groove, and a small spine slightly below the homolian line halfway to the posterior margin.

3. Frontal region with three long acute spines, the median or rostral spine is directed forwards, and the two supraorbital spines placed at an angle of about 45° with the rostrum. The rostral spine

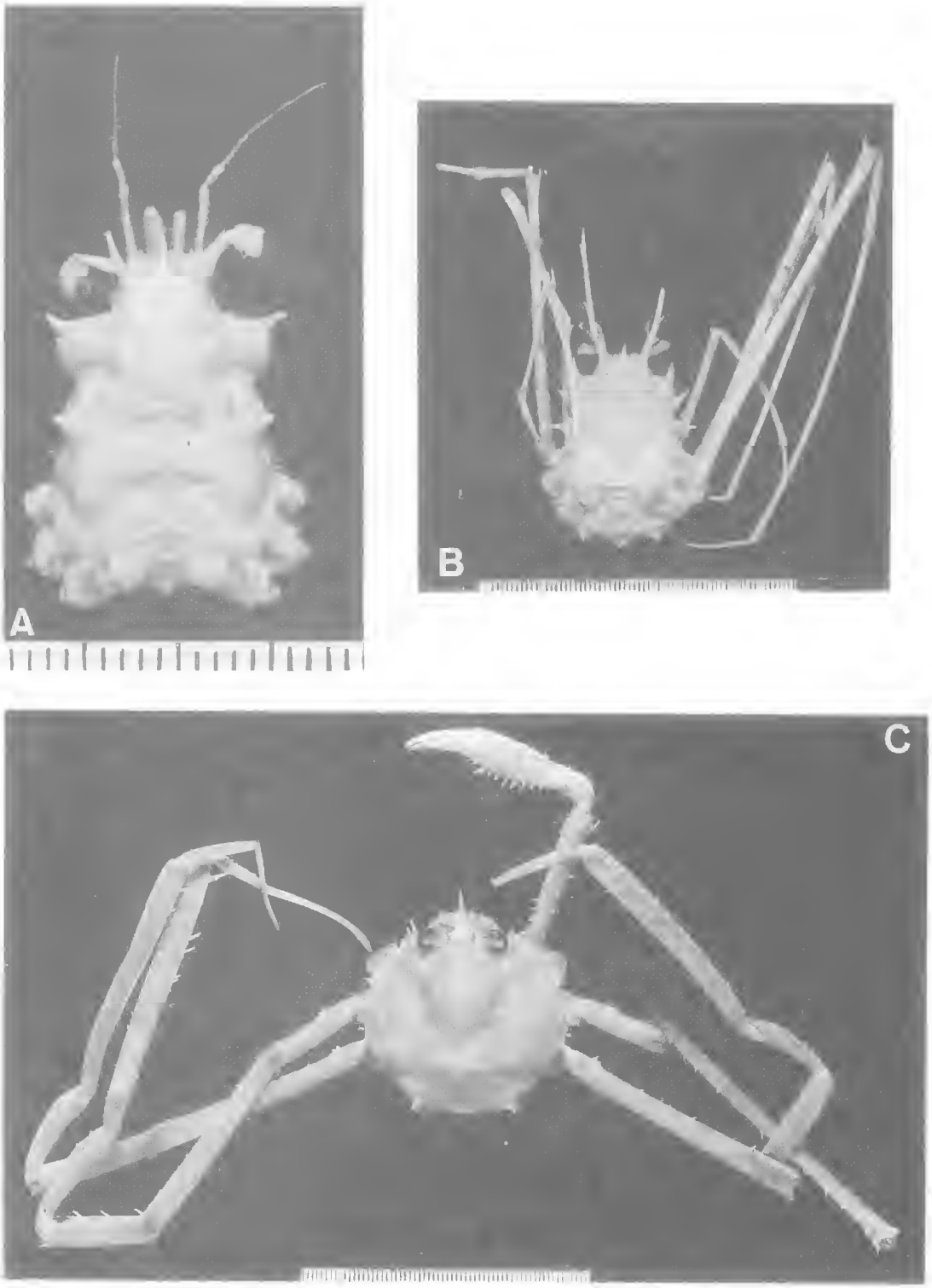


FIG. 3. A, *Latreillopsis bispinosa* Henderson, 1888, ♂, QM W10804; B, *Homolochunia kullar* Griffin and Brown, 1976, ♀ ovig., QM W10595; C, *Platymaia maoria* Dell, 1963, ♂, QM W10664. Scale divisions 1 mm.

is shorter than the supraorbitals but greater than half their length (the ratio described originally by Henderson for *L. bispinosa*). There appears to be variation in the length of the rostrum relative to the supraorbitals, with Barnard (1950) and Serène and Lohavanijaya (1973) figuring the rostrum at greater than half the length of the supraorbitals for *L. bispinosa*. Guinot and Richer de Forges (1981a) describe the length of the rostrum as a character for the separation of *L. gracilipes* from *L. bispinosa*. The rostrum is stated as being relatively longer in *L. gracilipes*. Considering the variation shown by *L. bispinosa* in rostrum length, this does not appear to be a strong character. The rostrum is also said to be orientated differently in *L. gracilipes*, but a comparison between *L. gracilipes* and *L. bispinosa* is difficult from Guinot and Richer de Forges' illustration (pl. VII, figs 1, 1a).

According to Guinot and Richer de Forges the homolian line of *L. gracilipes* differs from that of *L. bispinosa* by being clearly defined posteriorly and forming an angle in the mid-branchial region. The illustration of Barnard (1950, p. 339, fig. 65g) shows these same characters for an *L. bispinosa* specimen from South Africa, and therefore casts some doubt on their usefulness.

Anterior spination of the pterygostome and buccal frame appears to vary somewhat in prominence in *L. bispinosa* according to descriptions of specimens from different localities, and therefore is also of doubtful reliability in separating *L. gracilipes* from *L. bispinosa*.

As *L. gracilipes* was described from only two specimens it would be of interest to re-evaluate the characters which separate it from *L. bispinosa* when more material becomes available.

DISTRIBUTION

Japan, Philippines, Andamans, Kei Islands, east Africa and now Australia (SEQ).

Latreillopsis petterdi Grant, 1905
(Fig. 1B)

Latreillopsis petterdi Grant, 1905, pp.317–9, pl.10, figs 2,2a,2b; Rathbun, 1923, pp.140–3, pl.36; Dell, 1963, pp.224–5; Takeda and Miyake, 1969a, pp. 159–61, fig. 1, pl. 1; Griffin and Brown, 1976, pp.248–9.
Paromola petterdi: Serène and Lohavanijaya, 1973, pp.26–7.

MATERIAL EXAMINED

QM W10586, ♂ (61.2 mm), trawled M.V. 'Iron Summer', 27°35.54'S, 153°56.72'E, 520 m, 31.iii.1983, R. Morton (Q.F.S.); QM W10585, ♀ ovig. (45.1 mm), trawled M.V. 'Iron Summer', 27°15.33'S, 153°54.01'E, 535 m, 31.iii.1983, R. Morton (Q.F.S.); QM W10587, ♂ (47.4 mm), trawled M.V. 'Iron Summer', 27°54'S, 153°58'E, 490 m, 30.xi.1982, S. Hyland (Q.F.S.); QM W10588, 2 ♀ ovig. (45.6, 43.6 mm), trawled M.V. 'Iron Summer', 27°18'S, 153°54'E, 540 m, 13.viii.1982, G. Smith and J. Burke (Q.F.S.); QM W10581, ♀ ovig. (48.7 mm), ♀ (36.6 mm), trawled M.V. 'Iron Summer', 27°55'S, 154°01'E, 555 m, 30.xi.1982, (Q.F.S.); QM W10584, ♂ (52.8 mm), ♀ (38.6 mm), trawled M.V. 'Iron Summer', 27°35.04'S, 153°57.32'E, 545 m, 31.iii.1983, R. Morton (Q.F.S.); QM W10583, ♂ (56.8 mm), trawled M.V. 'Iron Summer', 27°53.90'S, 154°0.33'E, 560 m, 30.iii.1983, R. Morton (Q.F.S.); QM W10582, ♀ (61.6 mm), trawled M.V. 'Iron Summer', 27°13' to 27°22'S, 153°E, 500–540 m, 2–3.x.1982, M. Holmes (Q.F.S.); QM W10131, ♂ (69.6 mm), trawled 'Craigmin' survey, 26°31'S, 153°48'E, 480 m, 13.ix.1980, (Q.F.S.); QM W10755, ♂ (17.3 mm), trawled M.V. 'Iron Summer', 26.0 nautical miles off Pt Danger, 400 m, 15.xii.1982, G. Smith (Q.F.S.); QM W14912, ♂ (65.8 mm), trawled M.V. 'Iron Summer', 27°13.00'S, 153°52.53'E, 590 m, 9.v.1983, R. Morton (Q.F.S.); QM W14917, ♂ (45.5 mm), trawled M.V. 'Iron Summer', 27°12.83'S, 153°52.87'E, 555 m, 10.v.1983, R. Morton (Q.F.S.).

DISTRIBUTION

From southeast Queensland to South Australia and Tasmania; New Zealand.

Paromola japonica Parisi, 1915
(Figs 2c–e, 4B)

Parhomola japonica Parisi, 1915, p.109, pl.3; Balss, 1921, p.111; Sakai, 1935, p.35, pl.2; 1936, p.47, pl.3.
Parhomola cuvieri: Balss, 1921, p.178 (not Risso, 1816).
Homola (Parahomola) japonica: Yokoya, 1933, p. 99.
Paromola japonica: Sakai, 1976, pp.39(key),40, pl.9.
? *Paromola japonica*: Guinot and Richer de Forges, 1981a, pp.538–40, figs 10, 26, pl.III, figs 2,2a,2b.

MATERIAL EXAMINED

QM W10710, ♂ (cl. 37.4 mm [excluding rostrum], cw 32.8 mm), trawled M.V. 'Iron Summer', 27°45.6'S, 153°58'E, 540 m, 29.vii.1982, P. Dutton (Q.F.S.).

REMARKS

Our specimen agrees in major respects with the description and illustration of the type (Parisi, 1915). Some differences are:

1. The spinulation of the meri of the walking legs is more pronounced (more like that described by Guinot and Richer de Forges, 1981a, pl.3, figs 2, 2a).

2. The meri of the fifth legs are relatively longer in relation to carapace length than in the type.

3. The supraorbital spines and rostrum are relatively longer and appear a little more stout, the

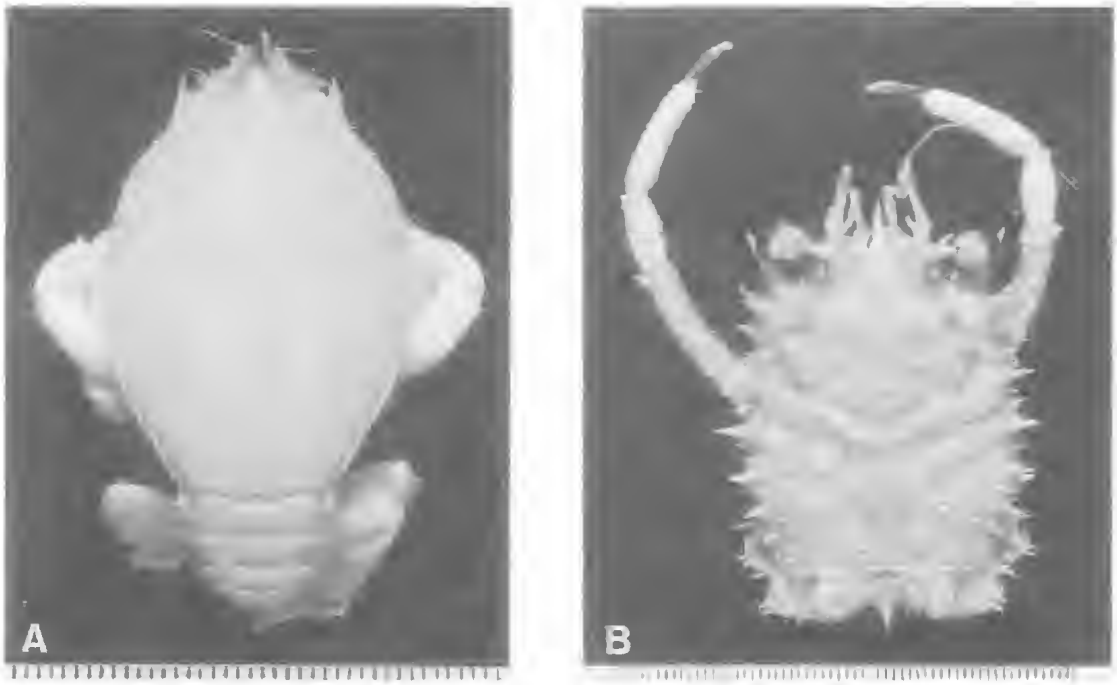


FIG. 4. A, *Notopoides latus* Henderson, 1888, ♀, QM W11501; B, *Paromola japonica* Parisi, 1915, ♂, QM W10710. Scale divisions 1 mm.

branch of the supra-orbitals being slightly more pronounced.

Minor variation in spinulation is also apparent between our specimen and the type photograph by Parisi (1915, pl.3), however similar variation is also evident in other specimens collected from Sagami Bay, and whose identity is therefore fairly certain (cf. Sakai, 1976, pl.9; Guinot and Richer de Forges, 1981a, pl.8, fig. 4).

Our specimen is virtually identical (in carapace appearance) to the specimen from Sagami Bay (♂, 62 × 50 mm) pictured in Guinot and Richer de Forges, 1981a (pl.8, fig. 4) (determined by Sakai), the only discernible difference being that our specimen has slightly longer supraorbital spines. This could be explained by damage to the Japanese specimen, or variation of this character induced by differing sizes (our specimen can be considered sub-adult as the chelipeds have not taken on the enlarged swollen form of large males). The carapace is also covered in short hairs which extend around the bases of spines but not the tips, as described by Sakai (1976) for Japanese specimens.

Similar or greater variation is also evident if specimens recorded from other localities are considered i.e. specimens from the Loyalty Isles (Guinot and Richer de Forges, 1981a, pl.3, figs. 2 and 3 respectively); and from Hawaii (Edmonson, 1932, pl.1).

Our specimen agrees with that described as ? *Paromola japonica* by Guinot and Richer de Forges (1981a) from the Loyalty Isles in having the merus of p.5 relatively longer than figured and described for large specimens of *P. japonica*. It would seem probable that the lengths of the leg segments relative to carapace length varies with size. The meral segments of the legs also carry spines stronger than described for Japanese or Hawaiian specimens, as in the Loyalty Isles specimens. This character may also vary with size. Our specimen also agrees closely with other comments and description by Guinot and Richer de Forges (1981a) for their specimen from the Loyalty Isles e.g. dactylus and propodus of 5th leg same as Fig. 2G; 1st pleopod agrees well with Fig. 5C; basal antennal segment identical to Fig. 1D except that it is missing the distal outer spine. The 2nd pleopod is a little different from Fig. 5C1 however, which is a Madagascar specimen (see comments below).

The specimen from Madagascar mentioned by Guinot and Richer de Forges (1981a) as questionably belonging to this species could indeed be so, considering the amount of intraspecific variation. They suggest that the Madagascar specimen might

be *P. alcocki* (because of its geography), however this seems unlikely as Sakai (1976) gives the size range of this species as less than 60 mm. Sakai (1976) has figured a *P. alcocki* with enlarged chelae at 40 mm, whereas the Madagascar specimen still had not developed this secondary sex character at 90 mm. However in the light of the points raised, the confusion over the separation of *P. japonica* and *P. alcocki*, and the fact that our pleopod 2 differs a little from that figured by Guinot and Richer de Forges (1981a, fig. 5C1), we are not prepared to make any judgement.

Sakai (1976) considers *P. hawaiiensis* (Edmonson, 1932) to be a synonym of *P. japonica*. Our specimen, although much smaller than the individual described by Edmonson, agrees in general with his description, within the limits of the variation already discussed.

DISTRIBUTION

Japan, Hawaii, the Loyalty Isles and now Queensland, Australia.

Paromolopsis boasi Wood-Mason, 1891
(Fig. 1C)

Paromolopsis boasi Wood-Mason, 1891, p.268, fig. 5; Alcock, 1899a, p.11; 1899b, p.159; 1901, p.65, pl.5, fig. 23; Ihle, 1913, p.60, text-fig. 23B; Gordon, 1950, p.244, text-fig. 16C; Serène and Lohavanijaya, 1973, p. 29, figs 39–42, pl.3; Sakai, 1976, p.43, pl.15, fig. 2; Guinot and Richer de Forges, 1981a, p.540, text-figs 3B, 4L, pl.V1, figs 3, 3a.

MATERIAL EXAMINED

QM W10589, ♀ (39.4 mm), trawled 'Craigmin' survey, 23°15.3'S, 154°21.7'E, 549m, 4.x.1980, (Q.F.S.); QM W10590, 2 ♀ ovig. (37.2, 36.1 mm), trawled M.V. 'Iron Summer', 27°59.37'S, 154°00.12'E, 590m, 31.iii.1983, R. Morton (Q.F.S.); QM W10591, ♂ (36.0 mm), trawled M.V. 'Iron Summer', 27°15.33'S, 153°54.01'E, 535m, 31.iii.1983, R. Morton (Q.F.S.); QM W10592, ♂ (39.3 mm), trawled M.V. 'Iron Summer', 27°35.04'S, 153°57.32'E, 545 m, 31.iii.1983, R. Morton (Q.F.S.); QM W14911, ♂ (34.1 mm), trawled M.V. 'Iron Summer', 27°13.00'S, 153°52.53'E, 590 m, 9.v.1983, R. Morton (Q.F.S.); QM W14918, ♀ ovig. (35.1 mm), 27°12.83'S, 153°52.87'E, 555 m, 10.v.1983, R. Morton (Q.F.S.); QM W11225, ♂ (39.4 mm), trawled M.V. 'Southern Intruder', 23°21'S, 153°23'E, 410 m, 30.xi.1983, P. Davie; QM W11226, ♀ (33.0 mm), trawled M.V. 'Southern Intruder', 23°45'S, 153°07'E, 550m, 29.xi.1983, P. Davie; AM P26553, ♂ (17.2 mm), trawled F.R.V. 'Kapala', 29°52–55'S, 153°43–42'E, 275 fms, 23.viii.1977, N.S.W. State Fisheries; AM P21800, ♂ (34.0 mm), trawled F.R.V. 'Kapala', 29°20– 26'S, 153°49–50'E, 250 fms, 12.x.1975, N.S.W. State Fisheries; AM P21696, ♀ (33.7 mm), trawled F.R.V. 'Kapala', 29°41–32'S, 153°45–47'E, 222–226 fms, 10.x.1975, N.S.W. State Fisheries.

DISTRIBUTION

East India, Andaman Sea, Ceylon, Macassar Sea, Japan, Madagascar, and now within Australia from mid-eastern Queensland to northeast N.S.W.

Family RANINIDAE

Notopoides latus Henderson, 1888
(Fig. 4A)

Notopoides latus Henderson, 1888, pp. 29, 30, pl. 2, fig. 6; Gordon, 1963, pp. 53–4, fig. 13; 1966, p. 345–50, figs 2–4; Bruce and Serène, 1972, pp. 76–81, figs 1–3; Serène and Vadon, 1981, p. 121, pl. 1A; Goeke, 1985, pp. 221, 224, 227 (key), figs 9A–1.

MATERIAL EXAMINED

QM W11501, 1 ♂ (23.8 mm), trawled M.V. 'Southern Intruder', 22°00'S, 153°31'E, 270 m, 1.xi.83, M. Dredge (Q.F.S.).

DISTRIBUTION

Off Kenya and Tanganyika, east Africa; Little Kei Is, Indonesia; the Philippines; and now mid-eastern Queensland, Australia.

Ranilia tenuiocellus sp. nov.
(Figs 5a–g, 7B, 8d–f)

MATERIAL EXAMINED

HOLOTYPE: QM W10802, ♂ (19.2 cw., 23.8 cl.), trawled M.V. 'Iron Summer', 400 m, 26.0 n. miles off Pt. Danger, 15.xii.1982, G. Smith (Q.F.S.).

PARATYPES: QM W10803, ♂ (20.0 mm), ♀ (20.0 mm). Location data the same as holotype.

DESCRIPTION

Carapace resembles other species of the genus — strongly convex laterally, evenly convex longitudinally. Dorsal carapace surface anteriorly and antero-laterally finely but obviously granular; punctate and smooth posteriorly. Carapace otherwise with irregular-shaped scars or rugosities placed symmetrically either side of the median line. Carapace length 1.24 × breadth. Antero-lateral tooth strong, sharp, pointed forward and slightly outward.

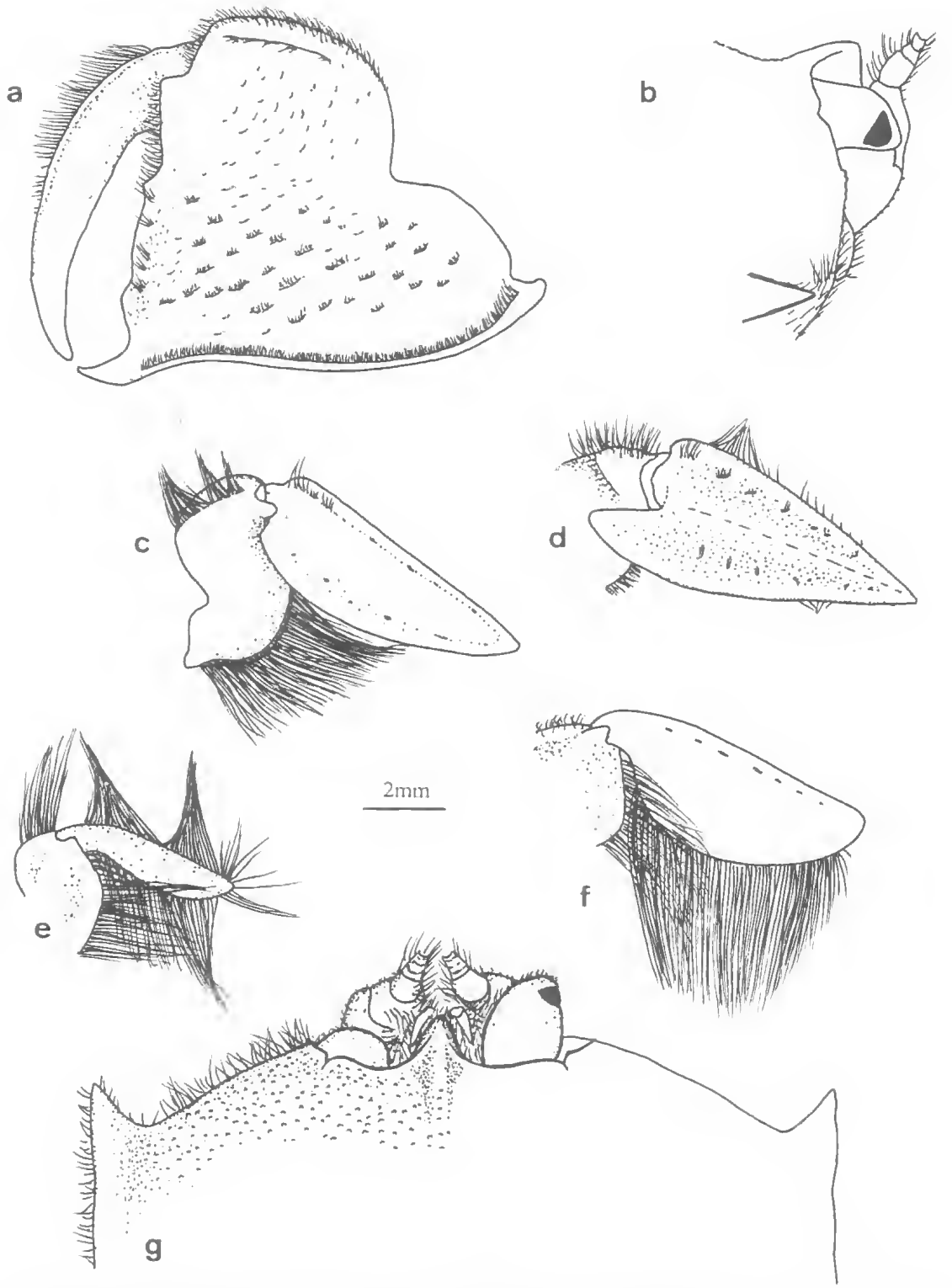


FIG. 5. *Ranilia tenuiocellus* sp. nov., Holotype ♂, QM W10802; a — left chela; b — anterior of carapace, lateral view; c–f — dactyli of first to fourth ambulatory legs; g — anterior of carapace, dorsal view.

Orbit without teeth, v-shaped fissure about level with middle of ocular peduncle, more or less lobed either side of this, raised tubercular ridge starting at level of tip of cornea and running obliquely downward. Rostrum sharply pointed, upturned; rostral carina and sulci project for short distances posteriorly. Rostrum with ventral septum separating ocular peduncles.

Eye peduncle flattened, ovate, folding obliquely downward and backward such that cornea is hidden from view. Cornea reduced, subterminal, triangular in outline. Anterior border of peduncle covered in minute granules and short tomentum. Antennules small, and concealed by the large basal segments of antennae. Third maxilliped slender with ischium smooth and bearing oblique row of longish hairs almost reaching internal edge, and a second row across the proximal internal corner; merus pitted with scattered bristles and short hairs arising from the pits, anterior border of ischium markedly concave.

Chelipeds large, deep, flattened, equal in size; carpus with small distal spine, anterior surface tuberculate, outer surface smooth, upper outer surface striated with short rows of small granules and bearing rows of short hairs; merus outer surface striated and with longish hairs; palm of chela compressed and deep; anterior edge with row of close set hairs, cutting margin sharp, with or without low teeth; fixed finger very short, smooth, and pointed; movable finger with dorsal row of hairs emerging from dorsal groove, curved and without differentiated teeth.

Legs fringed with long hairs; the second pair the longest, first and third subequal, the last the shortest and inserted dorsally. First pair with ischium bearing crest on ventral surface; leading edges of carpus and propodus sharp, and both bearing crests on upper anterior surfaces; dactylus blade-shaped with straight upper margin and convex lower margin. Segments of second pair with sharp leading edges but without additional anterior crests on upper surfaces; dactylus somewhat twisted at insertion and with low, smooth, central ridge on the outer face and strong, posterior distal lobe. Third pair stouter, with carapace and propodus having low anterior crests; merus with posterior border rounded proximally, straight in the distal two-thirds; carpus with strongly projecting distal lobe on posterior border; propodus broad; dactylus blade-shaped but truncated distally. Last pair with carpus deep, flattened, dactylus narrow and elongate.

Male pleopods as figured; first male pleopod with distinctive calcified plates laterally, reminiscent of lepadid barnacles.

Colour after alcohol preservation pale biscuit.

REMARKS

R. tenuiocellus sp. nov. closely resembles *R. horikoshi* Takeda, and both species differ from all other members of the genus in having degenerated eyes. It is immediately distinguishable from *R. horikoshi* Takeda by the lack of orbital teeth. In this character it is different from all previously described species. R. tenuiocellus also differs from *R. horikoshi* Takeda in the following characters:

1. Carapace more finely granular anteriorly and anterolaterally, and posteriorly smooth and punctate rather than 'scaly'.
2. Cornea positioned more or less sub-terminally on ocular peduncle rather than terminally.
3. The shape of the first and second male pleopods differ noticeably from those figured by Takeda (1975, fig. 3a–d). In particular the tip of pleopod two in *R. tenuiocellus* has a more slender 'neck' and a much more pronounced, almost 'beaked' apex.

This species is closely allied to *R. horikoshi* Takeda, however we believe that the strong differences in dentition of the orbit warrants separate species rank.

ETYMOLOGY

The species name refers to the characteristic small corneas, and is derived from the latin *tenuis* meaning weak or feeble and *ocellus* meaning little eyes.

DISTRIBUTION

Off Pt Danger, southeast Queensland.

Ranilia trirufomaculata sp. nov.
(Figs 6a–h, 7A, 8a–c)

Notopus ovatis: Tyndale-Biscoe and George, 1962, pp. 90–1 (not *N. ovatis* Henderson, 1888).

MATERIAL EXAMINED

HOLOTYPE: WAM 348-60, ♂ (20.4 mm), 7 miles W. of Cape Contour, Bernier Is., Honolulu dredge, 70 m, sand 16.v.1960, R.W. George on 'Davena'.

PARATYPES: WAM 347–60, ♂, ♀ (18.0, 17.2 mm), 8 miles W. of Wooded Is, Eastern Group, Abrolhos Is., Honolulu dredge, 150 m, coral sand and shell fragments, 12.v.1960, R.W. George on 'Davena'; QM W11403, ♂ (24.9 cw.), trawled M.V. 'Southern Intruder', 22°00'S, 153°31'E, 270 m, 1.xi.1983, M. Dredge (Q.F.S.).

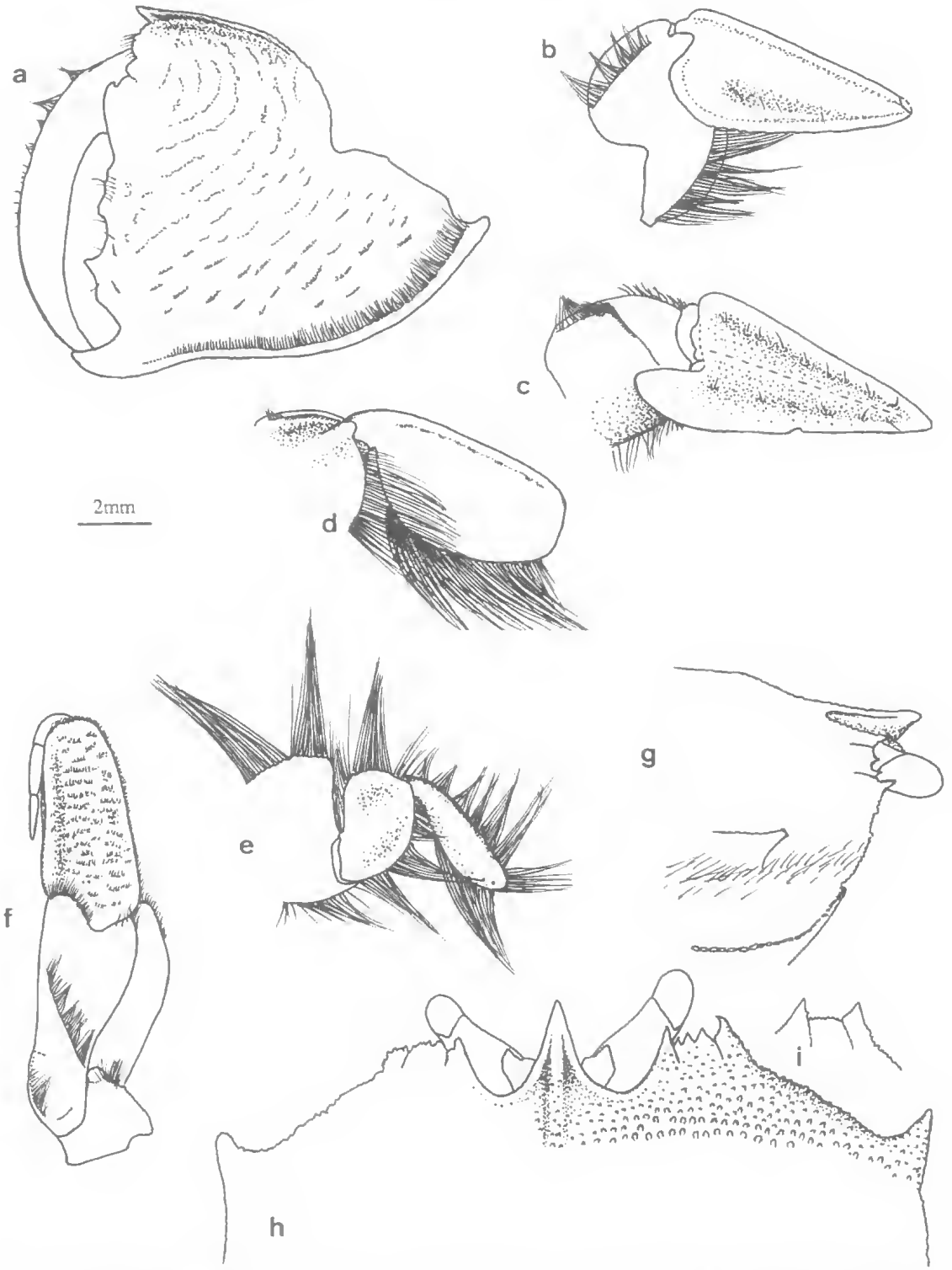


FIG. 6. *Ranilia trirufomaculata* sp. nov., Holotype ♂, WAM 348-60; a — left chela; b–e — dactyli of first to fourth ambulatory legs; f — third maxilliped; g — anterior of carapace, lateral view; h — dorsal view of same; i — more typical spination of supraorbital margin.

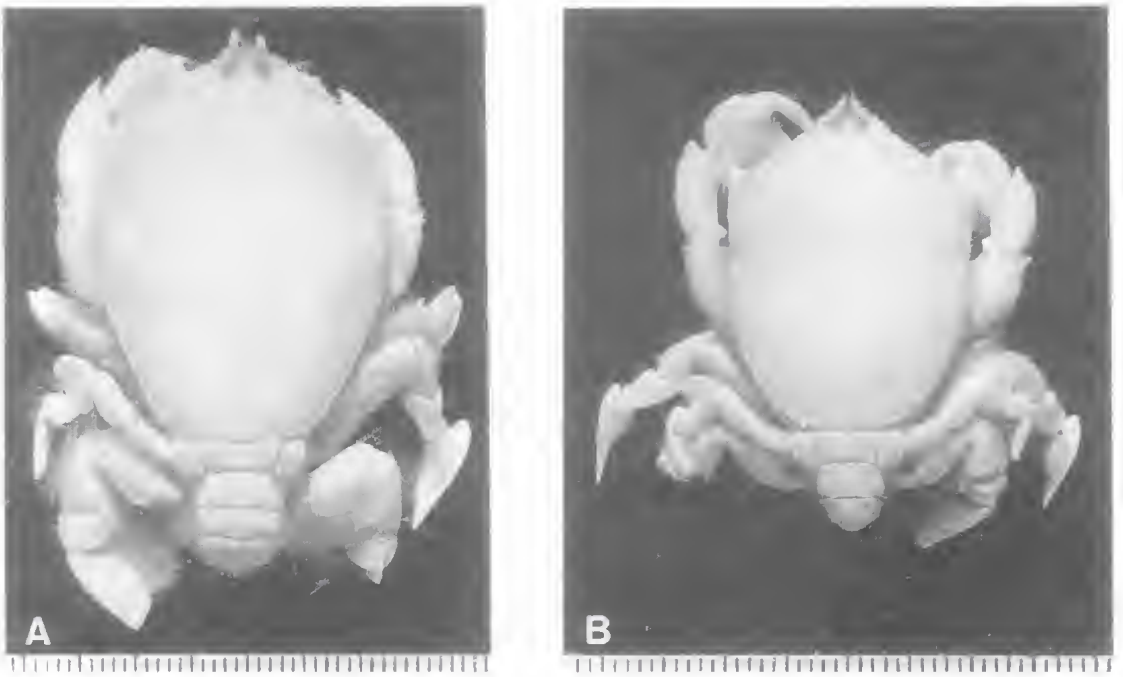


FIG. 7. A, *Ranilia trirufomaculata* sp. nov., Paratype ♀, QM W11403; B, *Ranilia tenuiocellus* sp. nov., Holotype ♂, QM W10802. Scale dimensions 1 mm.

DESCRIPTION

Carapace with dorsal surface finely but obviously tuberculate anteriorly and anterolaterally, becoming smooth and finely punctate posteriorly; irregular-shaped scars or rugosities placed symmetrically either side of the median line. Anterolateral teeth strong, sharp, pointed forward and slightly outward. Carapace length 1.27–1.29 × carapace breadth.

Orbit with short acute inner and outer teeth connected by a lower granular, sometimes spinous, square cut lobe. Rostrum sharply pointed, slightly upturned. Rostral carina and sulci project a short distance posteriorly. Rostrum with ventral septum separating ocular peduncles. Ratio of distance between external orbital angles and anterolateral teeth within the range 2.06–2.23.

Eye peduncle obliquely flattened although almost subparallel in dorsal view; folding obliquely downward and backward such that the cornea is hidden from view. Cornea well developed, terminal, and slightly less than half the length of the eyestalk. Peduncle covered in small granules and a short tomentum anteriorly.

Third maxillipeds of typical form, ischium slightly longer than merus, smooth with oblique row of longish hairs centrally and another short row across the proximal internal corner. Merus pitted and finely haired, *c.* 2.17 × longer than broad.

Chelipeds large, deep, flattened, equal in size; merus with outer surface striated and with longish hairs centrally and down the leading edge bordering a smooth glabrous triangular area; carpus with smooth lower outer surface becoming striated along upper leading edge merging into sharp pointed granules dorsally, a sharp prominent spine present on upper distal margin. Palm of chela compressed and deep; prominent subdistal spine on upper margin; anterior edge with row of close set hairs; outer surface glabrous but indented with striations bearing small hairs; cutting margin sharp with low subacute teeth. Fixed finger very short, smooth and pointed; moveable finger curved with cutting margin sharp and without differentiated teeth, dorsal row of hairs emerging from dorsal groove.

Legs fringed with long hairs; the second pair the longest, first and third subequal, the last the shortest and inserted dorsally. First pair with ischium bearing crest in ventral view; leading edges of carpus and propodus sharp, and both bearing hairy crest on upper anterior surfaces; dactylus blade-shaped with straight upper margin and

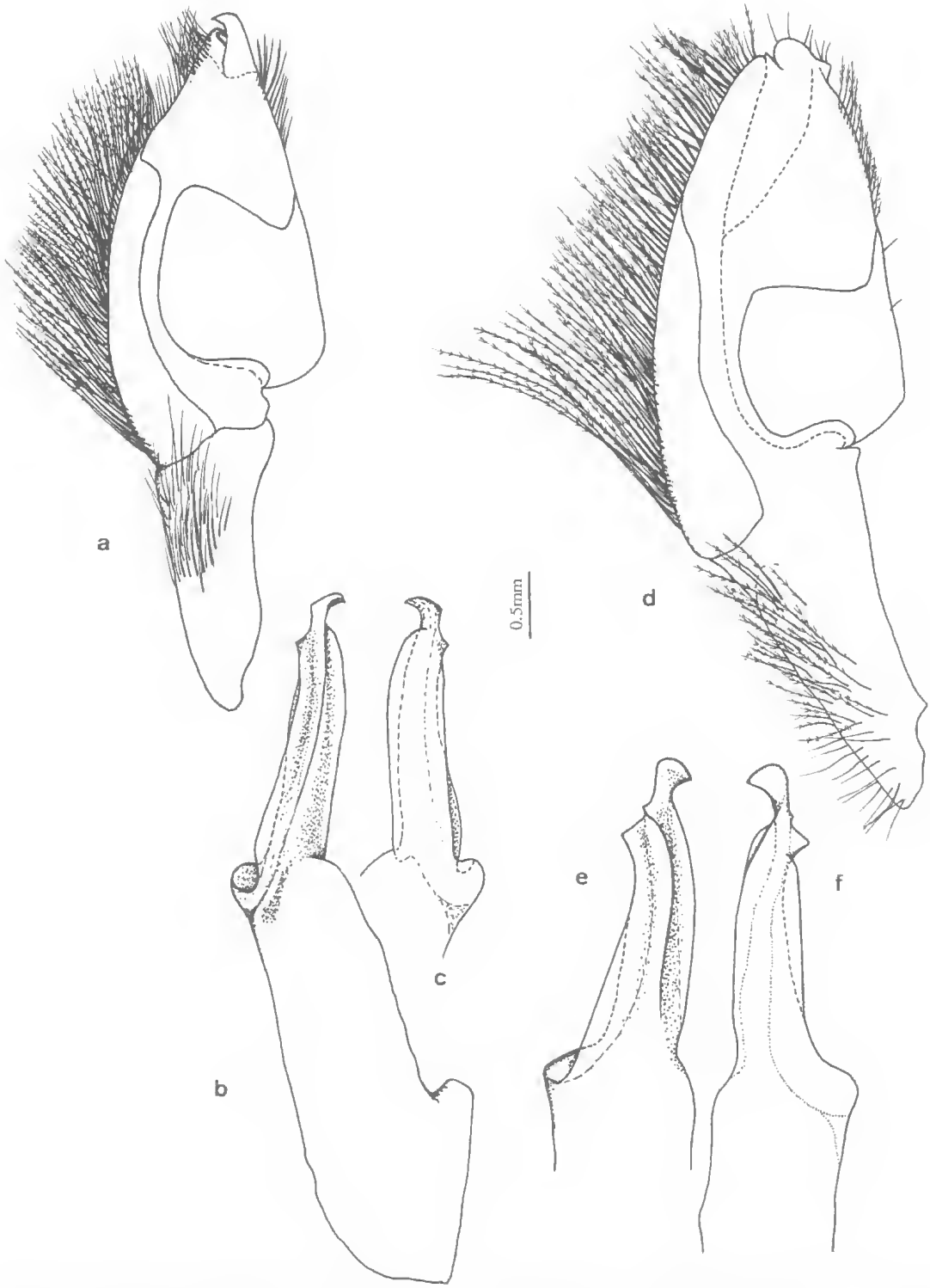


FIG. 8. *Ranilia trirufomaculata* sp. nov., Holotype ♂, WAM 348-60; a — first male pleopod; b — second male pleopod, inner view; c — outer view of same; *Ranilia tenuiocellus* sp. nov., Holotype ♂, QM W10802; d — first male pleopod; e — second male pleopod, outer view; f — inner view of same.

convex lower margin. Segments of second pair with sharp leading edges but without additional anterior crests on upper surfaces; dactylus twisted at insertion and bearing a low smooth central ridge on the outer face and a strong posterior distal lobe. Third pair stouter; merus, carpus and propodus with leading edges sharp; carpus with strongly projecting distal lobe on posterior border; propodus broad; dactylus with anterior border straight, posterior border convex, truncated distally. Last pair with carpus very deep and flattened; dactylus narrow and elongate.

Colour: pale biscuit (in alcohol) with two large rounded orange/red spots laterally and a much smaller spot anterior to these on the mid-line.

Remarks

R. trirufomaculata is most closely related in form to *R. misakiensis* Sakai from Japan. It differs from that species in the following particulars (based on the type description and figures, and on figures presented by Serène and Umali, 1972):

1. The ratio of distance between the exorbital angles and the anterolateral angles varies from 2.06-2.23 whereas in *R. misakiensis* this is greater, being 2.56 for specimens examined by Serène and Umali (1972) and 2.43 for measurements taken from the figure of the type female.

2. The chelae have a sharp distal spine on the superior border of the palm, this is not described or apparent from available figures, and yet is strongly developed and obvious on our specimens.

3. In *R. misakiensis* the wrist is marked by a raised ridge, which is hairy along the inner upper border, no such ridge is present in any of the present specimens, the inner upper border being evenly rounded and without hairs.

4. The dactylus of the third walking leg seems to project more at the outer distal margin and the truncate terminal edge seems comparatively wider.

5. The ischium and merus of the fourth walking legs are comparatively stouter in *R. misakiensis*.

6. *R. misakiensis* does not have the distinctive red spots dorsally that are obvious on *R. trirufomaculata* even after 28 years in preservative.

7. Although the figures of the pleopod 1 given by Serène and Umali (1972) are very poor it is still apparent that the pleopod 1 of *R. trirufomaculata* is narrower distally, has a different apical configuration and also differs in the size and shape of the lateral calcified plates.

8. The merus of the third maxilliped of *R. misakiensis* appears to narrow distally much more markedly than in the present species (pl. 1, fig. 8 of Serène and Umali, 1972).

The female specimen from Queensland differs slightly from those from Western Australia in that the lateral red spots are situated a little more anteriorly, and the dactyl of the left 3rd walking leg is more sharply and obliquely truncate (that of the right leg is missing). In the absence of more material these differences do not seem enough to erect a separate species or even subspecies.

Etymology

The species takes its name from the three large red spots on the dorsal surface of the carapace.

Distribution

Only recorded from the vicinity of Abrolhos and Bernier Islands, Western Australia and from off southeastern Queensland. Depths range from 70-270 m.

KEY TO INDO-WEST PACIFIC SPECIES OF *RANILIA* H. MILNE EDWARDS

The genus *Ranilia* now contains twelve species: six from the Atlantic and eastern Pacific — *R. muricata* H. Milne Edwards (type species), *R. constricta* (A. Milne Edwards) and *R. saldanhai* Rodriques da Costa from the Atlantic Coast of the Americas, *R. angustata* Stimpson and *R. fornicata* (Faxon) from the Pacific coast of the Americas, *R. atlantica* Studer from the Atlantic Coast of Africa; and six from the Indo-west Pacific — *R. orientalis* Sakai, *R. misakiensis* Sakai and *R. ovalis* (Henderson) from Japan, *R. horikoshi* Takeda from the East China Sea, and *R. tenuiocellus* sp. nov. and *R. trirufomaculata* sp. nov. from Australia. The following key should serve to separate the Indo-west Pacific species.

1. Cornea of eye markedly reduced, and not visible when peduncle is retracted 2
   Cornea of eye of normal form 3
2. Supraorbital border with three conical teeth ..... *R. horikoshii*
   Supraorbital border without teeth developed ..... *R. tenuiocellus*
3. All four pairs of ambulatory legs hatchet-shaped ..... *R. ovalis*
   Only first two pairs of ambulatory legs hatchet-shaped, third pair elongate, quadrangular in shape 4
4. Carapace broader, the breadth being more than 3/4 the total length, Fronto-orbital distance less than one half the breadth of carapace 5
   Carapace narrower, the breadth being less

than 3/4 the total length. Fronto-orbital distance more than one half the breadth of carapace ..... *R. orientalis*

5. Distance between antero-lateral angles 2.0–2.25 times the fronto-orbital distance; chelae with sharp distal spine on superior border of palm, and carpus without raised ridge on inner upper border; three red spots dorsally ..... *R. trirufomaculata*
Distance between anterolateral angles 2.4–2.6 times the fronto-orbital distance; chelae without spine on superior border of palm, and with raised ridge on inner upper border of carpus; carapace reddish-brown and without dorsal spots ..... *R. misakiensis*

Mursia microspina sp. nov.
(Figs 9a–g, 10)

MATERIAL EXAMINED

HOLOTYPE: QM W11437, 1 ♂ (cw. 27.9 mm, cb. excluding spines 26.7 mm, cl. 23.1 mm), trawled M.V. 'Iron Summer' 27°35'S, 153°50'E, 210 m, G. Smith (Q.F.S.), 15.xii.1982.

DESCRIPTION

Carapace broader than long (carapace width excluding spines 1.16 × carapace length); coarsely granulate over entire surface although more finely granulate on frontal and orbital regions; seven more or less distinct rows of tubercles radiating backwards from behind fronto-orbital region; front narrow (5.4 times in cl., 2.7 times in fronto-orbital width), three lobed, middle lobe projecting well beyond lateral lobes; anterolateral margins evenly convex, beaded with granules, and with 9–10 small lobes which are most prominent anteriorly becoming indistinct towards the lateral spine; lateral spine very short (*c.* 11 times in cl.), slender, curved upwards to horizontal in posterior view; posterolateral border noticeably shorter than anterolateral (0.84 times); posterior margin short (4.2 times in cl.), three lobed with laterals being pronounced while median is low and broad.

Inner suborbital lobe triangular with outer border much longer than inner border; separated from outer-orbital cup by a V-shaped sinus.

Merus of cheliped with three spines near distal outer margin, innermost low and rounded, outermost largest, prominent and sharply pointed (subequal or a little larger than lateral carapace spine). Outer face of wrist coarsely granulate, a row of three larger granular tubercles behind carpal/propodal joint, inner distal border pointed triangular. Outer face of palm also coarsely granular, four or five slightly larger granules along lower border just prior to fixed finger, eleven low granular tubercles and one spine arranged in uneven oblique rows running from serrate crest backwards towards joint, the spine is situated towards proximal end of lower border and is much smaller than the adjacent meral spine. Upper border with high crest and cut into nine teeth, largest distally. Fixed finger deflexed. Inner face of palm smooth. Dactyl with row of 27 stridulatory tubercles.

Ambulatory legs and abdomen are missing.

First male pleopod stout, evenly tapering to a blunt tip; fine spinules distally. Second male pleopod long and slender, constricted from near the middle and markedly recurved distally.

No indication of live colouring or patterning persists on the alcohol preserved specimens.

REMARKS

M. microspina resembles *M. aspera* Alcock and *M. hawaiiensis* Rathbun and differs from all other species by having short lateral spines, and small inconspicuous teeth on the outer inferior border of the palm. It differs from *M. aspera* by: 1. having a broader front (*c.* 5 times in cl. compared with *c.* 8 times in cl.); 2. median lobe of front protruding markedly beyond laterals; 3. granules on carapace and chelae much finer; 4. the teeth on the inferior border are not subequal small and acuminate, the proximal one being spinous; 5. *M. aspera* is a large species being nearly three times larger than the present adult specimen.

It differs from *M. hawaiiensis* by:

1. The posterolateral border is more markedly shorter than the anterolateral border (0.84 × compared with 0.95 ×).

2. The length to breadth (excluding lateral spines) ratio differs, being 1.16 in *M. microspina* and *c.* 1.25 in *M. hawaiiensis* (measurements given by Rathbun (1893) and Sakai (1976) and derived from pl. 18, fig. 3 in Rathbun (1906)).

3. The tubercles of our new species are arranged in seven longitudinal rows as opposed to five and are not as distinctly separated from the surrounding granules (compared with the figure of Rathbun (1906) and her description of 1893).

4. The lateral frontal lobes are less protruberant.

5. The tubercles on the lower inferior border of the chela are small and well separated from each other with no indication of being 'elongated and crested, each rather continuous' as described by Sakai (1965a, p. 55), and appears to be the case from Rathbun's figure (1906, pl. 18, fig. 4).

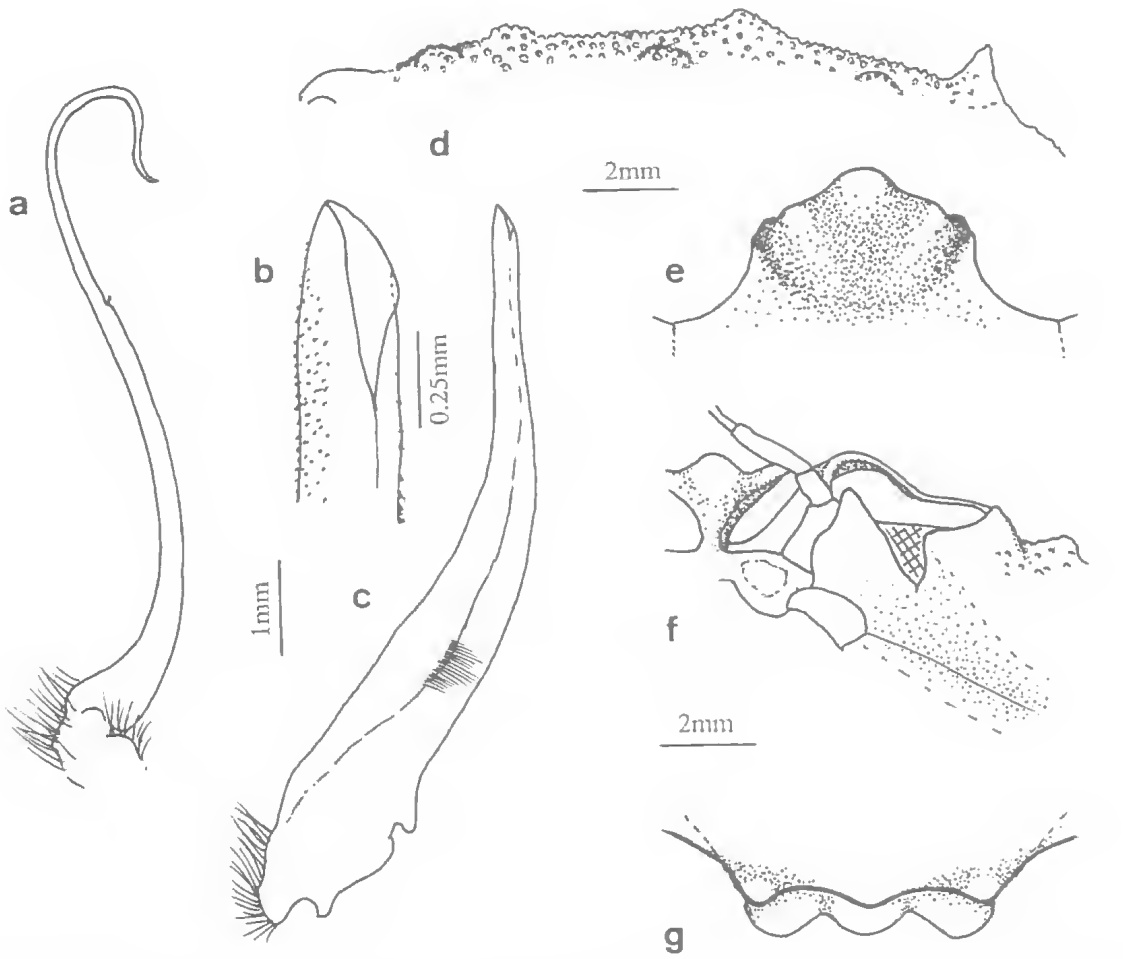


FIG. 9. *Mursia microspina* sp. nov., Holotype ♂, QM W11437; a — second male pleopod; b — view of the tip of first male pleopod; c — full view of same; d — outer-inferior portion of propodus of right cheliped; e — frontal view; f — ventral orbit; g — posterior carapace margin and first abdominal segment.

6. The tip of the second male pleopod is much less out-curved.

This species is very closely related to *M. hawaiiensis* but as only minor variation has been described within that species the divergences shown by the present specimen can be considered significant and justify its description as new.

ETYMOLOGY

The species derives its name from the relatively small lateral spines on the carapace.

DISTRIBUTION

Known only from the type locality, southeast Queensland, Australia.

Family LEUCOSIIDAE

Arcania undecimspinosa de Haan, 1841

Arcania undecimspinosa de Haan, 1841, p.135, pl.33, fig. 8; Alcock, 1896, p.266 (earlier literature); Sakai, 1937, p.124, figs 15b,16, pl.10, fig. 1; 1976, pp.90–1, pl.28, fig. 1; Holthuis and Sakai, 1970, p.119 (English), p.311 (Japanese), pl.11, fig. 2; Campbell, 1971, p.41.

Arcania granulosa Miers, 1877, p.240, pl.38, fig. 29.

MATERIAL EXAMINED

QM W10132, ♀ (23.0 mm), trawled 'Craigmin' survey, 22°56.1'S, 152°43.2'E, 360 m, 3.x.1980, Q.F.S.

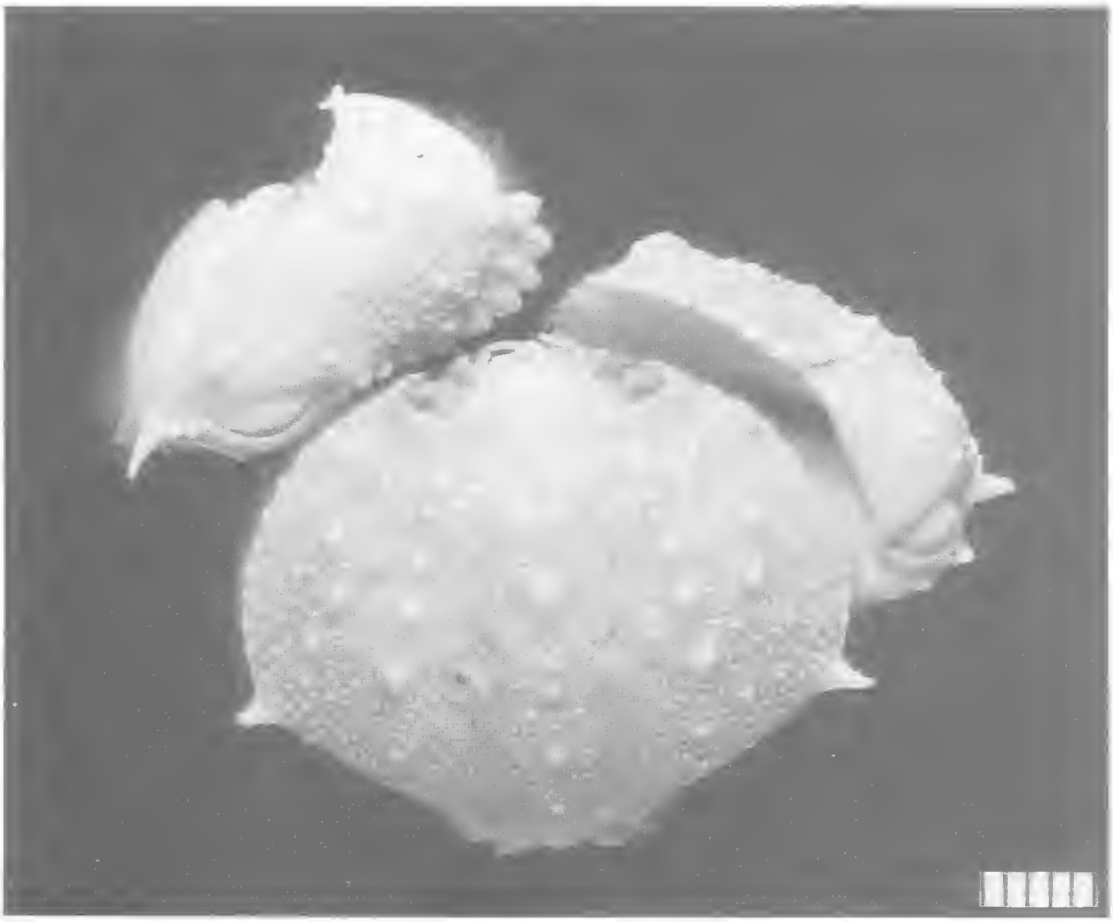


FIG. 10. *Mursia microspina* sp. nov., Holotype ♀, QM W11437. Scale divisions 1 mm.

DISTRIBUTION

India to Japan and Queensland, Australia. Previously recorded from southeast Queensland by Miers (1877) and Campbell (1971). Bathymetric range 30 to 360 m.

Family MAJIDAE

Cyrtomaia horrida Rathbun, 1916 (Fig. 1D)

Cyrtomaia horrida Rathbun, 1916, pp.532–3; Yokoya, 1933, p.145; Sakai, 1938, p.242; 1976, pp.180–1, pl.60; Griffin, 1976, pl.88, fig. 3; Guinot and Richer de Forges, 1982b, pp.36–40, figs 19A–E, 20A,B, 23C,C1,E; 1986, pp. 119–20, pl. 6A–C; Griffin and Tranter, 1986a, pp.24(key), 25–26.

Cyrtomaia Smithii tenuipedunculata Ihle and Ihle-Landenberg, 1931, pp.152–4 (in part, 1 ♂ spec. only), *fide* Griffin and Tranter, 1986a, pp.25, 26.

MATERIAL EXAMINED

QM W10141, ♀ ovig. (45.2 mm), trawled 'Craigmin' survey, 23°15.3'S, 154°21.7'E, 549 m, 4.x.1980, Q.F.S.; QM W10142, ♂ (31.8 mm), trawled 'Craigmin' survey, 23°15.3'S, 154°21.7'E, 549 m, 4.x.1980, Q.F.S.; QM W10140, ♀ (46.6 mm), trawled 'Craigmin' survey, 22°36.7'S, 154°14.0'E, 522 m, 4.x.1980, Q.F.S.; QM W11227, ♀ (30.4 mm), trawled M.V. 'Southern Intruder', 23°22'S, 152°45'E, 310–350 m, 30.xi.1983, P. Davie; QM W11228, ♂ (35.9 mm), trawled M.V. 'Southern Intruder', 23°54'S, 153°01'E, 465 m, 29.xi.1983, P. Davie; QM W11229, ♀ (44.1 mm), ♂ (44.9 mm), trawled M.V. 'Southern Intruder', 23°21'S, 153°23'E, 410 m, 30.xi.1983, P. Davie; QM W11230, 2 ♂ (49.8, 49.0 mm), trawled M.V. 'Southern Intruder', 23°07'S, 153°24'E, 400 m, 6.ix.1983, Q.F.S.; QM W11231, ♀ ovig. (43.5 mm), trawled M.V. 'Southern Intruder', 23°15'S, 153°18'E, 425 m, 6.ix.1983, Q.F.S.; QM W14922, ♂ (55.1 mm), trawled M.V. 'Southern Intruder', 23°28'S, 153°00'E, 110 m, 3.viii.1984, Q.F.S.; AM P34553, ♀, trawled off Java, Mortensen Java — South Africa Expedition, 7°42'S, 114°0'E, 450 m,

4.iv.1929, mud with corals, Sigsbee Trawl; AM P20207, ♀ ovig., ♂, trawled South China Sea, Ganton Trawl, 16°09.4'N, 114°31.6'E to 16°11'N, 114°29.7'E, 266–295 m, white muddy sand, 12.vi.1964, Fisheries Research Stn, Hong Kong.

REMARKS

Our specimens agree very well with the description of the holotype provided by Guinot and Richer de Forges (1982b). Some points however should be discussed. Our large male did not have a clearly defined intestioal spine, although younger males (QM W10142) and all females did have this spine. Also, the largest male, although slightly smaller than the holotype, appears more swollen in the cardiac region (extremely swollen when compared with younger males and females). The large ♀ (AM P34553) from Java, was suitably pilose although in general our specimens had a sparse tomentum. All had some longer hooked hairs on the mesogastric as has been described (Guinot and Richer de Forges, 1982b).

The protogastric spines are described by Guinot and Richer de Forges (1982b) as being practically rectilinear and inclined towards the froot. Although the spines on our specimens are inclined towards the front, they are varyingly divergent. The large ♀ (AM P34533) from Java is the least divergent, being almost parallel, however the largest males are quite divergent (there is some indication of damage near the bases and this may have resulted in unnatural development).

DISTRIBUTION

Philippines, Japan, and now Australia (off mid-eastern Queensland).

Cyrtomaia suhmii Miers, 1886

Cyrtomaia suhmii Miers, 1886, pp.16–7, pl.3, fig. 2.
Cyrtomaia suhmi: Griffin, 1974, pp.9–10; 1976, pp.252–3, fig.6; Griffin and Brown, 1976, pp.252–3, fig. 6; Guinot and Richer de Forges, 1982b, pp. 16, 21, figs 10, 11A–B, 23B; 1986, pp. 116–9, figs 11B, 12A–B, 14A–C, pl. 5A–D, F–I; Griffin and Tranter, 1986a, pp. 24(key), 30–1, fig. 9e–g; 1986b, pp. 352–3, figs 1,2.

MATERIAL EXAMINED

QM W10608, ♀ (72.3 mm), trawled M.V. 'Iron Summer', 27°14–19'S, 153°52–59'E, 530–540 m, 24.ix.1982, G. Smith (Q.F.S.); QM W10611, ♀ ovig. (74.1 mm), trawled M.V. 'Iron Summer', 27°13–22'S, 153°E, 500– 540 m, 2–3.x.1982, M. Holmes (Q.F.S.); QM W10609, ♂ (74.7 mm), trawled M.V. 'Iron Summer', 27°18'S, 153°54'E, 540 m, 13.viii.1982, G. Smith and J. Burke (Q.F.S.); QM W10612, ♂ (65.7 mm), trawled M.V. 'Iron Summer', 27°13'S, 153°22'E, 520 m, 25.iii.1983, R. Morton (Q.F.S.); QM W10610, ♀ (76.8 mm), ♂ (67.6 mm), trawled M.V. 'Iron Summer', 27°34'S, 153°56'E, 540 m, 24.iii.1983, R. Morton (Q.F.S.); QM W14908, 2 ♂ (61.6, 63.4 mm), trawled M.V. 'Iron Summer', 27°19.91'S, 153°53.47'E, 600 m, 10.v.83, Q.F.S.; QM W14909, ♂ (66.8 mm), trawled M.V. 'Iron Summer', 27°13.00'S, 153°52.53'E, 590 m, R. Morton (Q.F.S.); QM W14916, ♀ ovig. (73.7 mm), trawled M.V. 'Iron Summer', 27°12.83'S, 153°52.87'E, 555 m, 10.v.83, R. Morton (Q.F.S.); QM W11232, ♀ (66.8 mm), trawled M.V. 'Southern Intruder', 23°45'S, 153°07'E, 550 m, 29.xi.1983, P. Davie; QM W11233, ♀ (69.5 mm), trawled M.V. 'Southern Intruder', 23°17'S, 153°56'E, 460 m, 30.xi.1983, P. Davie

REMARKS

According to Griffin and Tranter (1986a) 'Most of the specimens previously described have no spine in the orbit between the eave and the postorbital spine, but there is a granule in this position in the holotype (Guioot and Richer de Forges, 1982b: fig.11) and a small spine in the juvenile specimen from Java (Ihle and Ihle-Landenberg, 1931). In the specimens from off the eastern Australian coast there is a small spine about a third the length of the postorbital spine'. Our specimens resemble the specimens from off New South Wales examined by Griffin and Tranter (1986a) and all have the small spine in the orbit although the prominence of this spine varies somewhat.

In his original description Miers uses the spelliog *suhmii* although on the accompanying figure caption the spelling *suhmi* is also used. Subsequently the latter spelling has been always used without explanatioo. As the former spelling was used by Miers throughout the description this was clearly the iotended form and should be used for the species.

DISTRIBUTION

Southern India, Bay of Bengal, Philippines, Indonesia, Japan, northwestern and eastern Australia.

Leptomithrax waitei (Whitelegge, 1900)

Chlorinoides waitei Whitelegge, 1900, pp. 143–6, pl.33.
Leptomithrax waitei: Rathbun, 1918, p.23; Griffin, 1966, p.285 (key); Griffin and Brown, 1976, p.253; Griffin and Tranter, 1986a, p. 208 (key).

MATERIAL EXAMINED

QM W10146, 2 ♀ (65.6, 65.6 mm), trawled 'Craigmin' survey, 26°20'S, 153°53'E, 300 m, 13.ix.1980, Q.F.S.;

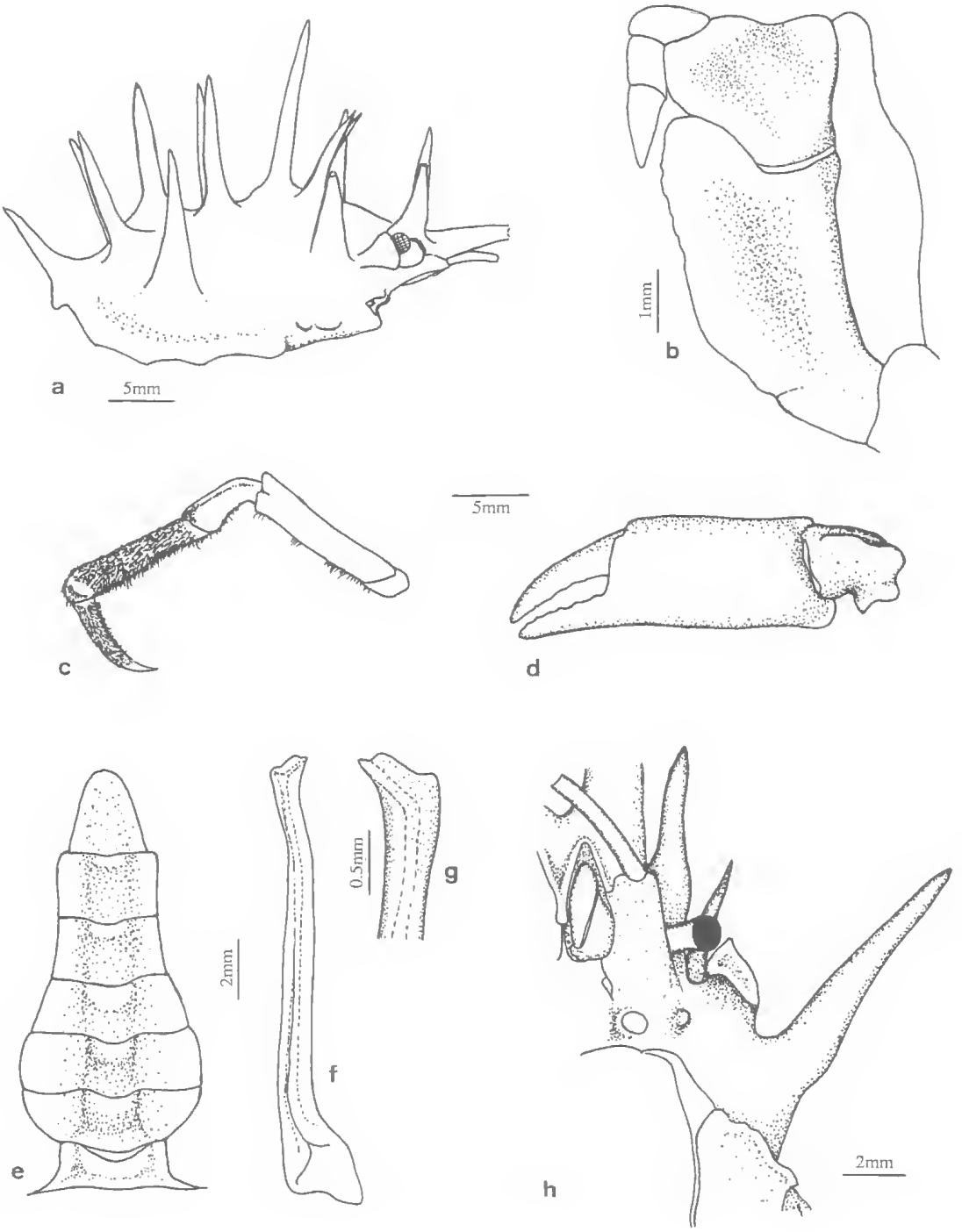


FIG. 11. *Rochinia griffini* sp. nov., Holotype ♂, QM W11245; a — lateral view of carapace; b — third maxilliped denuded; c — fourth ambulatory leg (Paratype ♀, QM W11246); d — left cheliped; e — abdomen; f — first male pleopod, abdominal view; g — sternal tip of same; h — ventral orbit.

QM W10143, ♂ (118.2 mm), ♀ (102.5 mm), trawled 'Craigmin' survey, 23°30'S, 153°04'E, 540 m, 29.ix.1980, Q.F.S.; QM W10144, ♂ (116.8 mm), 3 ♀ ovig. (101.9, 95.0, 95.6 mm), trawled 'Craigmin' survey, ?.x.1980, Q.F.S.; QM W10145, ♀ ovig. (98.8 mm), trawled 'Craigmin' survey, 23°30'S, 153°04'E, 540 m, 29.ix.1980, Q.F.S.; QM W10562, 2 ♀ (35.2, 37.1 mm), trawled M.V. 'Iron Summer', 27°13'S, 153°45'E, 200 m, 24.iii.1983, R. Morton (Q.F.S.).; QM W10561, ♂ (23.6 mm), ♀ (43.0 mm), trawled M.V. 'Iron Summer', 27°35'S, 153°50'E, 210 m, 15.xii.1982, G. Smith (Q.F.S.).; QM W10560, ♀ (61.7 mm), ♂ (79.6 mm), trawled M.V. 'Iron Summer', 27°41.7'S, no longitude, 260 m, 10.vi.1983, P. Dutton (Q.F.S.).

DISTRIBUTION

Eastern Australia, from mid-eastern Queensland to southern New South Wales.

Platymaia fimbriata Rathbun, 1916
(Fig. 13A–C)

Platymaia fimbriata Rathbun, 1916, pp.531–2; Ihle and Ihle-Landenberg, 1931, pp.149–52; Takeda and Miyake, 1969b, pp.497–8; Sakai, 1976, pp.176–8, pl.58; Griffin, 1976, p.206, fig. 9; Guinot and Richer de Forges, 1986, pp. 88 (key), 106–9, figs 7A–D, 8A–B, pl. 1F,G; Griffin and Tranter, 1986a, pp.44 (key), 46, fig. 10 i,j; 1986b, p. 354.

MATERIAL EXAMINED

QM W10620, ♂ (36.9 mm), ♀ ovig. (41.2 mm), ♀ (38.0 mm), trawled M.V. 'Iron Summer', 26°31'S, 153°48'E, 570 m, 13.xii.1982, G. Smith (Q.F.S.); QM W10625, ♀ (39.5 mm), trawled M.V. 'Iron Summer', 27°13- 22'S, 153°E, 500–540 m, 2–3.x.1982, M. Holmes (Q.F.S.); QM W10624, ♀ juv. (30.2 mm), trawled M.V. 'Iron Summer', 27°13.52'S, 153°53.46'E, 620 m, 31.iii.1983, R. Morton (Q.F.S.); QM W10621, ♂ (39.2 mm), trawled M.V. 'Iron Summer', 27°18'S, 153°54'E, 540 m, 13.viii.1982, G. Smith and J. Burke (Q.F.S.); QM W10622, ♂ (39.6 mm) trawled M.V. 'Iron Summer', 27°53.90'S, 154°00.33'E, 560 m, 30.iii.1983, R. Morton (Q.F.S.); QM W10623, ♀ ovig. (44.3 mm), trawled M.V. 'Iron Summer', 27°59.37'S, 154°00.12'E, 590 m, 31.iii.1983, R. Morton (Q.F.S.); QM W10626, ♀ juv. (30.6 mm), trawled M.V. 'Iron Summer', 27°13.69'S, 153°54.93'E, 600 m, 31.iii.1983, R. Morton (Q.F.S.); QM W14907, ♀ juv. (30.3 mm), trawled M.V. 'Iron Summer', 27°19.91'S, 153°53.47'E, 600 m, 10.v.1983, Q.F.S.; QM W14910, ♂ (29.6 mm), ♀ juv. (30.7 mm), trawled M.V. 'Iron Summer', 27°13.00'S, 153°52.53'E, 590 m, R. Morton (Q.F.S.); QM W14915, ♀ juv. (29.8 mm), trawled M.V. 'Iron Summer', 27°12.83'S, 153°52.87'E, 555 m, 10.v.1983, R. Morton (Q.F.S.); QM W10137, ♂ (39.4 mm), trawled 'Craigmin' survey, 22°36.7'S, 154°14.0'E, 522 m, 4.x.1980, Q.F.S; QM W10138, 2 ♀ ovig. (49.8, 39.3 mm), 3 ♂ (37.2, 38.0, 40.9 mm), trawled 'Craigmin' survey, 23°15.3'S, 154°21.7'E, 549 m, 4.x.1980, Q.F.S; QM W11237, ♀ ovig. (37.8 mm), trawled M.V. 'Southern Intruder', 23°21'S, 153°23'E, 410 m, 30.xi.1983, P. Davie; QM W11238, ♀ ovig. (45.2 mm), trawled M.V. 'Southern Intruder', 23°45'S, 153°02'E, 550 m, 29.xi.1983, P. Davie; QM W14920, ♂ (37.7 mm), trawled M.V. 'Southern Intruder', 23°37'S, 153°16'E, 590 m, 9.viii.1983, Q.F.S.

REMARKS

As noted by Griffin and Tranter (1986b) spinulation of the carapace and dorsal surface of the last two pairs of ambulatory legs is highly variable. We were able to distinguish three groups: those that were as spinulous as the type series; those with a marked reduction in carapace spines and with only granules or very small spinules on the last two pairs of ambulatory legs; and an intermediate group. These three groups were easily sorted and variation was not obviously continuous. The spiny specimens were very common, the smooth and the intermediates much rarer. The tip of the first male pleopod also showed variation between the groups.

As the forms sometimes occurred sympatrically, and differences were of degree only we cannot consider them separate species.

DISTRIBUTION

Northwestern and eastern Australia, Indonesia, Philippines and Japan.

Platymaia maoria Dell, 1963
(Fig. 3C)

Platymaia maoria Dell, 1963, pp.247–51; Guinot and Richer de Forges, 1986, pp. 88(key), 109–12, figs 9A–D, 10E,F, pl. 4A, B; Griffin and Tranter, 1986a, pp.44(key), 46–7, fig. 10g, h, pl.59.

MATERIAL EXAMINED

QM W10664, ♂ (44.9 mm), trawled M.V. 'Iron Summer', 27°14–19'S, 153°52–54'E, 530–540 m, 24.ix.1982, G. Smith (Q.F.S.); QM W14921, ♀ (49.0 mm), trawled M.V. 'Southern Intruder', 23°46'S, 153°11'E, 600 m, 26.iv.1984, Q.F.S.

DISTRIBUTION

New Zealand, eastern Australia.

Platymaia remifera Rathbun, 1916
(Fig. 14C)

Platymaia remifera Rathbun, 1916, pp.530–1; Serène and Lohavanijaya, 1973, pp.48–9, figs 79–92, pl.VIII, figs A–C; Guinot and Richer de Forges, 1986, pp. 102–5, figs 6A–D, 10L–M, pl. 2A–C.

12. *Rochinia griffini* sp. nov., Paratype ♂, QM W11246. Scale divisions 1 mm.

Platymaia wyvillethomsoni: Serène and Vadon, 1981: 123,128; Griffin and Tranter, 1986a, pp.44 (key), 47–8, fig. 10g,h, pl. 5, fig. a.

not *Platymaia wyville-thomsoni* Miers, 1886, pp. 13–14, pl. 2, fig. 1.

MATERIAL EXAMINED

QM W10133, 2 ♀ (37.7, 34.7 mm), trawled 'Craigmin' survey, 22°36.7'S, 154°14.0'E, 522 m, 4.x.1980, Q.F.S; QM W10134, ♀ (38.3 mm), trawled 'Craigmin' survey, 23°30'S, 153°04'E, 540 m, 20.ix.1980, Q.F.S; QM W10136, 2 ♂ (38.0, 34.0 mm), ♀ (35.3 mm), trawled 'Craigmin' survey, 23°15.3'S, 154°21.7'E, 549 m, 4.x.1980, Q.F.S; QM W10135, ♂ (37.8 mm), trawled 'Craigmin' survey, 23°30'S, 153°04'E, 540 m, 20.ix.1980, Q.F.S; QM W11239, 5 ♀ (35.9, 36.4, 37.1, 39.1, 39.5 mm), 2 ♀ juv. (29.3, 29.4 mm), 7 ♂ (28.0, 31.7, 37.2, 39.1, 39.6, 40.6, 43.8 mm), trawled M.V. 'Southern Intruder', 23°21'S, 153°23'E, 410 m, 30.xi.1983, P. Davie; QM W11240, ♂ (30.3 mm), ♀ (39.2 mm), trawled M.V. 'Southern Intruder', 23°22'S, 152°45'E, 310–350 m, 30.xi.1983; P. Davie; QM W11243, ♂ (39.7 mm), ♀ (40.9 mm), trawled M.V. 'Southern Intruder', 23°54'S, 153°01'E, 465 m, 29.xi.1983, P. Davie; QM W11244, 6 ♀ (34.4, 37.3, 37.6, 39.5, 39.9, 40.6 mm), 2 ♀ juv. (29.9, 34.9 mm), 10 ♂ (31.9, 32.3, 35.5, 35.7, 36.5, 36.5, 36.9, 36.9, 37.2, 38.2 mm), trawled M.V. 'Southern Intruder', 23°21'S, 153°23'E, 410 m, 30.xi.1983, P. Davie; QM W11241, ♂ (36.5 mm), trawled M.V. 'Southern Intruder', 23°45'S, 153°07'E, 550 m, 29.xi.1983, P. Davie; QM W11242, 2 ♂ (37.7, 39.5 mm), trawled M.V. 'Southern Intruder', 23°52'S, 153°02'E, 650 m, 29.xi.1983, P. Davie.

REMARKS

There is still uncertainty concerning the identities of *P. remifera* and *P. wyvillethomsoni*. Griffin (1976, p. 208) states, 'it is clear that there is considerable variation in the tuberculation and spinulation of the carapace in this species [*P. wyvillethomsoni*]. Most particularly this concerns

the orbit and the posterior and posterolateral portions of the carapace'. Guinot and Richer de Forges (1986) however still use the absence of a spine on the supraorbital margin as a way of defining *P. remifera*. Further their illustration of the tip of the first male pleopods of what they consider as *P. remifera* differs to a certain degree from Griffin and Tranter's (1986a) illustration of a *P. wyvillethomsoni* from eastern Australia.

Our specimens are certainly conspecific with those examined by Griffin and Tranter (1986a) from eastern Australia and the first male pleopods are identical. The illustration of the first male pleopod of one of Rathbun's (1918) specimens (of *P. wyvillethomsoni*) from the Great Australian Bight given by Guinot and Richer de Forges (1986) (as *P.* aff. *wyvillethomsoni*) also appears to indicate a departure in form from a typical eastern Australian specimen and to what extent such variation can be considered inter- or intraspecific needs to be decided. Unfortunately *P. wyvillethomsoni* was described from a single female and therefore it is difficult to assess if the size of the supraorbital spine on that specimen is aberrant. Guinot and Richer de Forges (1986) feel that the holotype is the only specimen of *P. wyvillethomsoni* so far reported on. Richer de Forges (pers. comm.) after examing a part of our material, considers it to be identical with that reported on by Guinot and Richer de Forges (1986) from the Philippines, and as none of our specimens show significant spine development on the supra-orbital margin we follow Guinot and Richer de Forges, as the last revisers, and refer to our specimens as *Platymaia remifera*.

DISTRIBUTION

Philippine Islands, South China Sea, eastern Australia.

Pleistacantha oryx Ortmann, 1893
(Fig. 14A)

Pleistacantha oryx Ortman, 1893, p. 39; Sakai, 1965a, pp. 69–70, text-figs 10b,d, pl. 30, fig. 2; 1976, pp. 172–4, text-fig. 93, pl. 55; Griffin, 1974, p. 28; 1976, p. 209; Guinot and Richer de Forges, 1986, pp. 126–9, figs 15A–C, 16A,C,Ea, 18A–D, pl. 7A–D; Griffin and Tranter, 1986a, pp. 49 (key), 51–2.

Pleistacantha orynx (sic): Takeda and Miyake, 1969b, pp. 492–3.

Pleistacantha moseleyi: Sakai, 1938, pp. 234–6, fig. 20, pl. 34, figs 2,3 (non *Pleistacantha moseleyi* Miers, 1886).

MATERIAL EXAMINED

QM W10596, ♂ (35.3 mm), trawled M.V. 'Iron Summer', 28°04'S, 153°57'E, 400 m, 28.vi.82, P. Dutton (Q.F.S.).

Mortensen Pacific Expedition: East China Sea, 32°17'N, 128°11'E, 198 m, trawl No. 6, 14.v.1914, ♀ (38.7 mm); Japan, Nagasaki, ♂ (54.5 mm); Japan, Sagami Sea, Okinose, 540 m, 28.vi.1914, 2 ♂ (17.5, 19.5 mm), ♀ juv. (10.2 mm), 3 ♀ ovig. (18.4, 16.5, 19.5 mm).

Mortensen Java — S. Africa Exped. Stn 15, Bali Sea, 7°29'S, 114°49'E, ca. 240 m, Sigsbee trawl, sand and mud with concretions, 10.iv.1929, ♂ (20.8 mm).

REMARKS

Our specimen was separated from *P. moseleyi* by the characters listed by Griffin (1974, 1976) and Griffin and Tranter (1986a). It does however appear that there may be another species being confused with *P. oryx* which matures at a much larger size. Our specimen is extremely close in appearance to the figure of Sakai (fig. 93, 1976) in having very widely divergent pseudorostral spines and marked carapace spination. Sakai's specimen was an unusually large ♀.

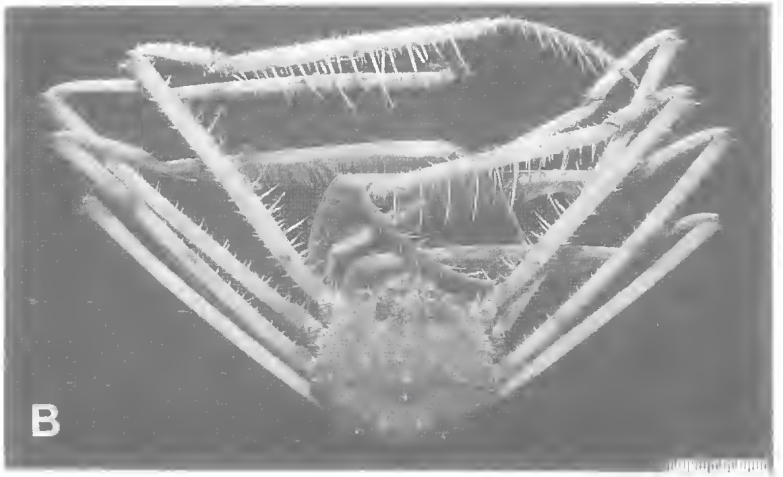
Two other specimens collected by Th. Mortensen (Mortensen Pacific Expedition) one from Nagasaki and one from the East China Sea were examined at the Australian Museum (where they were on loan from the Zoological Museum, University of Copenhagen). These were also large specimens and the latter had the widely divergent pseudorostral spines of Sakai's specimen (unfortunately broken off on the former). Takeda and Miyake (1969b) reported on another unusually large, immature specimen from the East China Sea, although apparently their specimen was not as spiny as those we have examined.

True *P. oryx* appear to mature at between 15 and 20 mm carapace breadth (in both sexes) and seem to be consistent in form, especially in the shape of the rostrum and dorsal spination. It is possible that *P. rubida* may also be confused with *P. oryx* although the rostral spines are supposed to be very short on that species.

We feel we are not in a position to pursue this matter and therefore include our specimen within *P. oryx*. They are obviously closely allied and it seems likely that if two species are involved the small specimens of the larger species would be difficult to separate.

DISTRIBUTION

Japan, East China Sea, Philippine Islands, Java, Andaman Sea, west Arabian Sea and now Australia (SEQ).



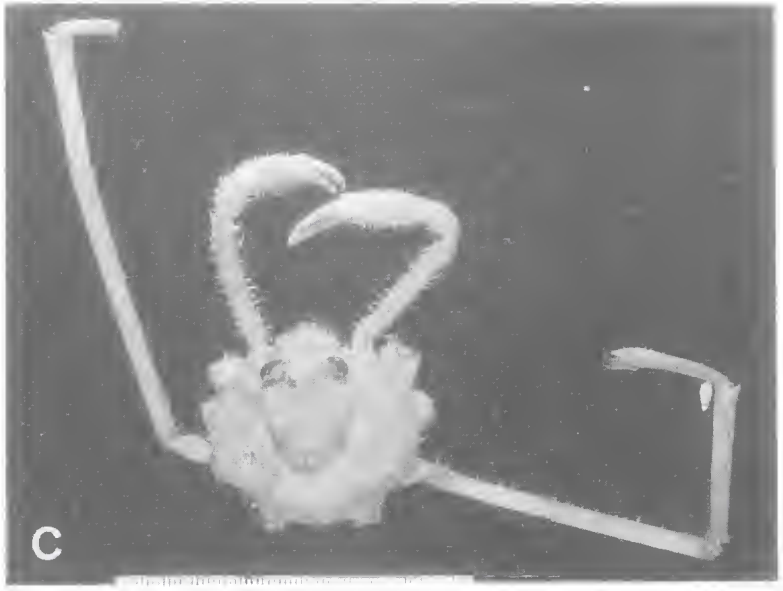


FIG. 13. *Platymaia fimbriata* Rathbun, 1916; A — typical form, ♀ ovig., QM W10136; B — smooth form, ♂ QM W10621; C — intermediate form, ♀ ovig., QM W11238. Scale divisions 1 mm.

Rochinia griffini sp. nov.
(Figs 11a–h, 12)

MATERIAL EXAMINED

HOLOTYPE: QM W11245, ♂ (18.5 mm), trawled M.V. 'Iron Summer', 27°59.37'S, 154°00'E, 590 m, 31.iii.1983, R. Morton (Q.F.S.).

PARATYPES: QM W11247, ♀ (11.9 mm), trawled M.V. 'Iron Summer', 27°44'S, 153°52'E, 220 m (Est.), 30.vii.1982, P. Dutton (Q.F.S.); QM W11246, ♀ (17.5 mm), trawled M.V. 'Iron Summer', 27°35.45'S, 153°56.72'E, 520 m, 31.iii.1983, R. Morton (Q.F.S.); AM P32090, ♀ juv. (cl. 42 mm), trawled F.R.V. 'Kapala' off Point Danger, northern N.S.W., 540 m.

DESCRIPTION

Carapace pyriform and with a thick tomentum of closely-set tangled hairs and a few longer finer hairs. Dorsal surface with fifteen long acute spines — a cardiac, mesogastric and intestinal, along the medial line; and laterally, three branchials, one hepatic, one protogastric and one supra-orbital. Orbit with a cupped post-orbital process. The pseudorostral spines are broken in the male holotype, but in the juvenile female specimen, are greater than three quarters of the carapace length; they are divergent from the base in all specimens.

Eyes are small with darkly pigmented cornea, freely moveable and retract into a cupped post-orbital process. Basal antennal joint narrow, widest at base of antennules, truncated; moveable segments clearly visible below rostrum, second segment shorter than first, flagellum longest, one or two stout bristles at internal distal ends of first and second moveable segments.

Male chelipeds much stouter than legs and much longer than length of carapace (including rostrum); ischium triangular in cross-section, with spine on upper distal angle; carpus with sharp carinae on upper outer edge and inner ventral edge; palm of cheliped rectangular, *c.* 1.8 times as long as broad, smooth and glabrous; moveable finger *c.* 0.75 times length of palm; fingers with a series of low rounded teeth along cutting edge and with a slight gape when closed. Female chelipeds only slightly stouter than legs and shorter than the length of the carapace (including rostrum), carinae on carpus less pronounced, fingers with cutting edges touching throughout length when closed. Cheliped of juvenile female covered with a short tomentum, unlike adults.

First ambulatory leg considerably longer than others; merus about equal to length of carpus and propodus, *c.* 1.4 times length of carapace (including rostrum). Length of legs decreasing posteriorly. Dactyli strong and recurved in distal half.

Male abdomen of 7 free segments, smooth; third segment about 1.8 times wider than sixth segment, sixth segment 1.5 times as wide as long; seventh segment slightly longer than wide, broadly convex apically. Male sternum smooth.

First pleopod of male straight, relatively broad and only slightly tapering; tip with shoulder on outer edge, and inner edge inclined and produced obliquely, ending in an acute tip at aperture.

Colour: After preservation — pale biscuit; adult female with pink on distal ends of fingers of chelae, juvenile female with dark brown tips to the fingers.

The holotype male bore an anemone almost totally covering its back.

REMARKS

Griffin and Tranter (1986a) recorded, with reserve, one specimen of this species as *Rochina pulchra*, but indicated it was probably new. This species is like *R. pulchra* in having many long carapace spines, and as in *R. pulchra* the supraorbital spine, hepatic spine and protogastric spine are all long, slender and upright. It does however differ from *R. pulchra*, as Griffin and Tranter (1986a) indicated, by having fewer carapace spines — only one protogastric on each side, not two; only one mesogastric spine; and one spine on the branchial margin posterolaterally.

It appears to us that *R. griffini* is more closely allied to those species with strong preorbital spines and prominent epibranchial spines. Griffin and Tranter (1986b) list seven such species or probable species: *R. riversandersoni* (Alcock 1895); three species previously confused with *R. riversandersoni* but as yet undescribed (a Jolo Sea species, see Griffin, 1976; a South China Sea species, see Serène and Lohavanijaya, 1973; and a Kermadec species, see Yaldwyn and Dawson 1976); *R. sibogae* Griffin and Tranter, 1986; *R. galathea* Griffin and Tranter, 1986; and *R. soela* Griffin and Tranter, 1986.

R. griffini differs from *R. soela* and the South China Sea species in having a spine rather than a tubercle on the cardiac region. It differs from *R. sibogae* (and *R. soela*) because those two species have a large hepatic plate fused to the postorbital lobe. *R. galathea* differs by its very broad petaloid hepatic spine. The Jolo Sea species and *R. riversandersoni* differ in having sharply conical tubercles on the dorsal branchial region rather than the long spines of *R. griffini*. The Kermadec species described by Yaldwyn and Dawson (1976) is very similar to *R. griffini* but differs in having relatively short, broad, supraorbital spines, and only small gastric spines which appear from the

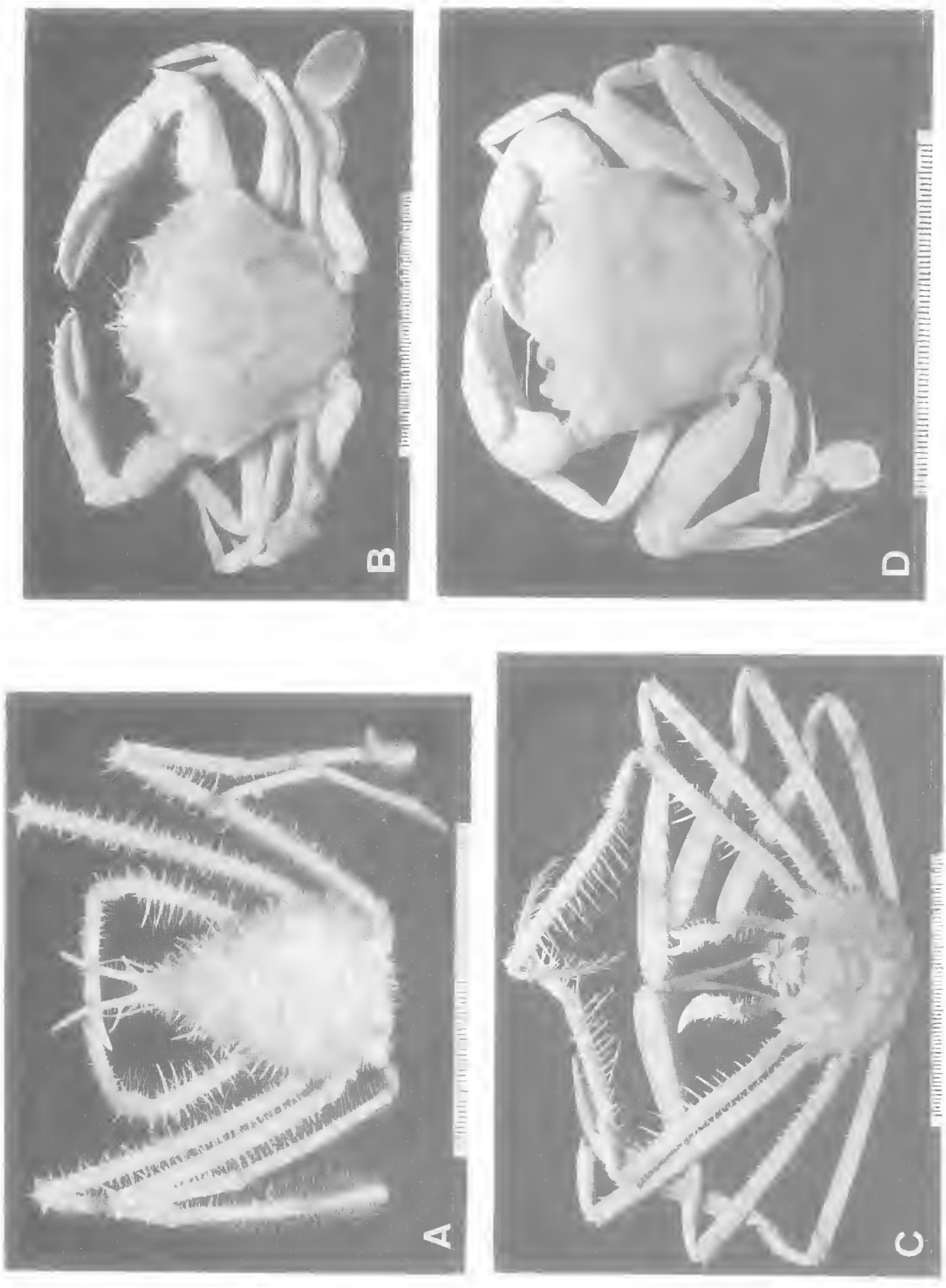


FIG. 14. A, *Pleistacantha oryx* Ortmann, 1893, ♂, QM W10596; B, *Ovalipes molleri* (Ward, 1933), ♀, QM W10564; C, *Platymaia remifera* Rathbun, 1916, ♂, QM W11240; D, *Benthochascon hemingi* Alcock and Anderson, 1899, ♂, QM W11236. Scale divisions 1 mm.

illustrations to be no more than sharp tubercles and which 'may be reduced to a low tubercle in small specimens'.

ETYMOLOGY

The species is named to honour Dr Des Griffin for his contribution to majid taxonomy.

DISTRIBUTION

Australia, from SEQ to northern N.S.W.

Benthochascon hemingi Alcock and Anderson, 1899
(Fig. 14D)

Benthochascon hemingi Alcock and Anderson, 1899, p.10; Alcock, 1899a, p.69, pl.3, fig. 2; 1899b, p.15; Alcock and MacGilchrist, 1905, pl.76, figs 4,4a; Doflein, 1904, p.90, pl.29, figs 1, 2, pl. 41, figs 1, 2; Sakai, 1965a, pp.39, 44, pl.6, figs 2; 1976, pp.333-4, pl.114.
Carcinonectes pacificus Stephenson, 1972a, pp.129–30, fig. 3; 1972b, p.3(key).

MATERIAL EXAMINED

QM W10575, ♂ (43.8 mm), trawled M.V. 'Iron Summer', 27°35.04'S, 153°57.32'E, 545 m, 31.iii.1983, R. Morton (Q.F.S.); QM W10576, ♂ (49.1 mm), trawled M.V. 'Iron Summer', 27°35.54'S, 153°56.72'E, 520 m, 31.iii.1983, R. Morton (Q.F.S.); QM W10577, ♂ (48.8 mm), trawled M.V. 'Iron Summer', 27°15.33'S, 153°54.01'E, 31.iii.1983, R. Morton (Q.F.S.); QM W10578, ♂ (49.7 mm), trawled M.V. 'Iron Summer', 27°35.54'S, 153°56.72'E, 520 m, 31.iii.1983, R. Morton (Q.F.S.); QM W10579, ♂ (51.6 mm), trawled M.V. 'Iron Summer', 27°53.90'S, 154°00.33'E, 560 m, 30.iii.1983, R. Morton (Q.F.S.); QM W10580, ♂ (46.6 mm), trawled M.V. 'Iron Summer', 27°13'S, 153°22'E, 520 m, 25.iii.1983, R. Morton (Q.F.S.); QM W10152, ♂ (61.9 mm), trawled 'Craigmin' survey, 23°28'S, 153°19'E, 562 m, 20.ix.1980, Q.F.S.; QM W10154, ♂ (47.1 mm), trawled 'Craigmin' survey, 23°15.3'S, 154°21.7'E, 549 m, 4.x.1980, Q.F.S.; QM W10153, 2 ♂ (49.1, 50.7 mm), trawled 'Craigmin' survey, 22°36.7'S, 154°14.0'E, 522 m, 4.x.1980, (Q.F.S.); QM W11235, ♂ (52.4 mm), trawled M.V. 'Southern Intruder', 23°21'S, 153°23'E, 410 m, 30.xi.1983, P. Davie; QM W11236, ♂ (64.0 mm), 2 ♀ (46.0, 48.8 mm), trawled M.V. 'Southern Intruder', 23°22'S, 152°45'E, 310–350 m, 30.x.1983, P. Davie.

REMARKS

Carcinonectes Stephenson, 1972, and its sole species *C. pacificus* Stephenson, 1972, must become junior subjective synonyms of *Benthochascon* Alcock and Anderson, 1899, and *B. hemingi* Alcock and Anderson, 1899, respectively. Stephenson's erection of *Carcinonectes* appears to have been based on the presumption that the specimen he examined belonged to the subfamily Carcininae, and this presumption apparently caused him to look no further in his search for its identity. *Benthochascon* may well be more appropriately placed in the Carcininae where Stephenson felt his specimen should be.

DISTRIBUTION

Japan, Andaman Sea, New Caledonia and now eastern Australia (mid-eastern and southeast Qld).

Charybdis (Gonioneptunus) bimaculata (Miers, 1886)

Goniosoma variegatum, var. *bimaculatum* Miers, 1886, p.191, pl.15, figs 3, 3a–c.
Charybdis (*Gonioneptunus*) *bimaculata*: Leene, 1938, pp.126–9, figs 70, 71; Stephenson, Hudson and Campbell, 1957, pp.504–5, figs 2J, 3K, pl.3, fig. 4, pl.4H, pl.5A; Sakai, 1976, p.364, pl.128, fig. 1.
Charybdis (*Goniohellenus*) *bimaculata*: Moosa, 1981, pp. 145–6.

MATERIAL EXAMINED

QM W10151, ♂ (37.9 mm), trawled 'Craigmin' survey, 22°51.7'S, 152°45.7'E, 261 m, 3.x.1980, Q.F.S; QM W10150, 4 ♂ (37.3, 38.1, 39.8, 42.7 mm), trawled 'Craigmin' survey, 21°30'S, 152°56'E, 240m, 22.ix.1980, Q.F.S.

DISTRIBUTION

India and Maldives to Japan, the Philippines and eastern Australia (from mid-eastern Queensland to Botany Bay, New South Wales).

Charybdis (Charybdis) miles (de Haan, 1835)

Portunus (Charybdis) miles de Haan, 1835, p.41, pl.11, fig. 1.
Charybdis (Goniosoma) miles: Alcock, 1899a, p.62; Chopra, 1935, p.486, text-fig. 13; Shen, 1937, p.123, text-fig. 13.
Charybdis (Charybdis) miles: Leene, 1938, p.38, figs 10-13, pl.4F; Stephenson, 1961, p.116; Sakai, 1976, pp.358–9, pl.124; Moosa, 1981, p. 145.

MATERIAL EXAMINED

QM W10149, ♂ (80.9 mm), trawled 'Craigmin' survey, 23°10.6'S, 152°12.3'E, 135 m, 2.x.1980, Q.F.S; QM W11397, ♂ (97.4 mm), trawled M.V. 'Southern Intruder', 23°06'S, 153°02'E, 150 m, 28.viii.1983, M. Dredge (Q.F.S.).

DISTRIBUTION

India, Gulf of Oman, Singapore, Japan, Phil-

ippines, and Australia. Known to occur in depths from 20 to over 200 m (Stephenson 1972b).

Ovalipes molleri (Ward, 1933)
(Fig. 14B)

Aeneacancer molleri Ward, 1933, pp.381–3, pl.23, fig. 11.

Ovalipes molleri: Stephenson and Rees, 1968, pp.237–9, figs 1H, 2G, 3G, 4G, pls 37A, 40B, 41B, 42H; Dawson and Yaldwyn, 1974, pp.46–47; Griffin and Brown, 1976, p.254.

MATERIAL EXAMINED

QM W10571, 4 ♀ (28.8, 29.9, 46.0, 61.5 mm), trawled M.V. 'Iron Summer', 27°53.90'S, 154°00.33'E, 560 m, 30.iii.1983, R. Morton (Q.F.S.); QM W10570, 2 ♀ juv. (22.4, 24.0 mm), ♀ (67.8 mm), ♂ (72.1 mm), 26.0 n. miles off Pt Danger, 400m, 15.xii.1982, G. Smith (Q.F.S.); QM W10569, ♂ (85.8 mm), trawled M.V. 'Iron Summer', 27°56'S, 153°54'E, 590 m, 30.xi.1982, S. Hyland (Q.F.S.); QM W10567, ♀ (77.5 mm), trawled M.V. 'Iron Summer', 27°15.33'S, 153°54.01'E, 535 m, 31.iii.1983, R. Morton (Q.F.S.); QM W10566, ♂ (85.0 mm), trawled M.V. 'Iron Summer', 27°53.9'S, 154°0.33'E, 560 m, 30.iii.1983, R. Morton (Q.F.S.); QM W10568, ♀ (60.2 mm), trawled M.V. 'Iron Summer', 27°18'S, 153°54'E, 540 m, 13.viii.1982, G. Smith and J. Burke (Q.F.S.); QM W10565, ♂ (juv., 22.5 mm), ♂ (89.4 mm), trawled M.V. 'Iron Summer', 27°55'S, 154°01'E, 555 m, 30.xi.1982, Q.F.S.; QM W10564, ♀ (65.8 mm), trawled M.V. 'Iron Summer', 27°54'S, 153°58'E, 490 m, 30.xi.1982, S. Hyland (Q.F.S.); QM W10563, ♀ (66.1 mm), trawled M.V. 'Iron Summer', 27°13-22'S, 153°E, 500–540 m, M. Holmes (Q.F.S.).

DISTRIBUTION

Eastern Australia (from southeast Queensland to Victoria) and northern New Zealand.

Parathranites orientalis (Miers, 1886)

Lupocyclus (Parathranites) orientalis Miers, 1886, p.186, pl.17, figs 1a–c.

Parathranites orientalis: Alcock, 1899a, p.17; Sakai, 1936, p.119, pl.32, fig. 2; 1939, p.376, fig. 2; 1965, p.113, pl.51, fig. 1; 1976, p.332, pl.113, fig. 3; Barnard, 1950, p.148, figs 29i–l; Stephenson, 1961, p.97, figs 1B, 2H, pl.1, fig. 2, pl.4B; Crosnier, 1962, p.22, fig. 24; Serène and Lohavanijaya, 1973, pp.59–60, pl.XIII, fig. A.

MATERIAL EXAMINED

QM W10598, 2 ♂ (24.6, 27.9 mm), trawled M.V. 'Iron Summer', 27°41.7'S, no longitude, 260 m, 10.vi.1983, P. Dutton (Q.F.S.); QM W10599, ♂ (24.0 mm), trawled M.V. 'Iron Summer', 27°35'S, 153°50'E, 210 m, 15.xii.1982, G. Smith (Q.F.S.).

DISTRIBUTION

Madagascar, Seychelles, India, Andamans, Kii Is., Japan, Admiralty Is., eastern Australia (off SE. Qld and Port Stephens, N.S.W.) and Solomon Bank.

Family GERYONIDAE

Chaceon bicolor Manning and Holthuis, 1989

Chaceon bicolor Manning and Holthuis, 1989, pp.55–57, figs 3, 4.

Geryon affinis: Griffin and Brown, 1976, pp.256–7, figs 7–9; Sakai, 1978, pp.9–11, figs 18–19, pl.2, fig. D; [not *Geryon affinis* A. Milne Edwards and Bouvier, 1894].

Geryon quinquedens: Guinot and Richer de Forges, 1981c, p.249 [not *Geryon quinquedens* Smith, 1879].

MATERIAL EXAMINED

QM W10572, 2 ♀ (128.2, 140.6 mm), trawled M.V. 'Iron Summer', 27°13.69'S, 153°54.93'E, 600 m, 31.iii.1983, R. Morton (Q.F.S.); QM W10573, ♀ (159.7 mm), trawled M.V. 'Iron Summer', 27°59.37'S, 154°00.12'E, 590 m, 31.iii.1983, Q.F.S; QM W10574, ♂ (162.9 mm), trawled M.V. 'Iron Summer', 27°S, 153–4°E, 31.iii.1983, Q.F.S.

DISTRIBUTION

Central Pacific: Emperor Seamount Chain in Japan; New Caledonia; and south to Sydney off eastern Australia.

Family GONEPLACIDAE

Intesius pilosus Guinot and Richer de Forges, 1981

Intesius pilosus Guinot and Richer de Forges, 1981b, pl.VII, 1, 1a, 1b; 1981c, pp. 253–6, fig. 6D, 11A–G.

MATERIAL EXAMINED

QM W12401, ♀ (19.0 mm), trawled 'Nimbus' 27°00'S, 153°39'E, 183 m, 28.vii.1968, A.J. Bruce.

REMARKS

Our specimen differs slightly from the holotype in having the accessory spinules on the anterolateral spines not as strongly marked and the second anterolateral spine set slightly closer to the first (the outer orbital tooth). These differences may be size related as the present specimen is nearly half the size of the holotype male.

DISTRIBUTION

Loyalty Isles and now southeast Queensland, Australia.

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